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THE JUBILEE
OF
ANÆSTHETIC MIDWIFERY.

An Inaugural Address

TO THE

GLASGOW GYNÆCOLOGICAL AND OBSTETRICAL SOCIETY,
ON TUESDAY, 19th JANUARY, 1897, BY
THE HON. PRESIDENT,

A. R. SIMPSON, M.D.,

PROFESSOR OF MIDWIFERY IN THE UNIVERSITY OF EDINBURGH.

Reprinted from the "Glasgow Medical Journal."

GLASGOW:
PRINTED BY ALEX. MACDOUGALL, 68 MITCHELL STREET.
1897.

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THE JUBILEE OF ANÆSTHETIC MIDWIFERY.

BY A. R. SIMPSON, M.D.,
Professor of Midwifery in the University of Edinburgh.

MR. PRESIDENT AND GENTLEMEN,—My first duty in meeting you to-night is to offer you my hearty thanks for the distinction you have conferred on me in electing me as your honorary president. It is a high honour to preside over a Society which, though young in years, has already made valuable contributions to the progress of obstetrics and gynæcology, and it affords me peculiar gratification to be brought into this pleasant relationship, alike with the younger workers in the field and with the older obstetricians whose friendship I had the happiness to gain during the years when I was a practitioner of medicine in Glasgow from 1865 to 1870.

I am well disposed to believe that these former friendships have conspired with your generous appreciation of what work I may have done, or encouraged younger men to do, in leading you to pay me this welcome compliment. But whenever I am called to occupy the presidential chair of an obstetrical society, it always comes back to me that there's more in a name than Shakespeare's lovelorn Juliet was willing to allow; and I have fancied that some of you thought it fitting that the session that should see the jubilee of anæsthetic midwifery should have a Simpson for its honorary president. So, though the subject has been already treated very ably and appropriately by Dr. Ballantyne in his inaugural address to our Edinburgh

Obstetrical Society, you may desire that I should still take it as the topic of my dissertation now.

THE FIRST ANÆSTHETIC LABOUR.

I proposed to your secretary to meet you to-day, because it was on a Tuesday, the 19th of January, fifty years ago, that J. Y. Simpson first made a woman in labour breathe the vapour of sulphuric ether and delivered her in her sleep. The case and its results were stated publicly on the following day—first to his class in the University, and later in the evening to his brethren in the Obstetrical Society. In the February number of the *Edinburgh Monthly Journal for Medical Science* some details were published; and in “Notes on the Inhalation of Sulphuric Ether in the Practice of Midwifery,” which appeared in the March number of that *Journal*, it is more fully recorded thus:—

“The first case in which I employed the ether vapour occurred on the 19th of January. The pelvis of the mother was greatly contracted in its conjugate diameter from the projection forwards and downwards of the promontory of the sacrum; the lumbar portion of the spine was distorted, and she walked very lamely. The present was her second confinement. Her first labour had been long and difficult; she began to suffer on a Monday, and, after a protracted trial of the long forceps, was at last delivered by craniotomy late on the subsequent Thursday night. Even after the cranium had been fully broken down, a considerable time and much traction had been required to drag the diminished and mutilated head of the infant through the contracted brim of the pelvis, and she was long in recovering. Contrary to the urgent advice of her medical attendant, Mr. Figg, he was not made aware of her present or second pregnancy till she had arrived at nearly the end of the ninth month. It was thus too late to have recourse to the induction of premature labour, which had been strongly pressed upon her as the only means of saving her child, should she again fall in the family way. The pains of her second labour commenced in the forenoon of the 19th. I saw her with Mr. Figg at 5 o’clock in the afternoon, and again at 7 o’clock. The os uteri was pretty well dilated, the liquor amnii not evacuated, the presenting head very high, mobile, and difficult to touch; and a pulsating loop of the umbilical cord was felt floating below it in the unruptured bag of membranes.

“From 5 to 9 o’clock the pains seemed only to push the circle

of the os uteri further downwards, without increasing its dilatation or making the head in any degree enter into the pelvic brim. Assisted by Dr. Zeigler, Dr. Keith, and Mr. Figg, I shortly after 9 o'clock made the patient inhale the ether vapour. As she afterwards informed us, she almost immediately came under the anodyne influence of the ether. But in consequence of doubts upon this point, its use was continued for nearly twenty minutes before I proceeded to turn the infant (as I had previously predetermined to do). A knee was easily seized, and the child's extremities and trunk readily drawn down; but extreme exertion was required in order to extract the head. At length it passed the contracted brim with the anterior part of its right parietal bone deeply indented by pressure against the projecting promontory of the sacrum, and the whole cranium flattened and compressed laterally. The infant gasped several times, but full respiration could not be established. The transverse or biparietal measurement of its head, at the site of the indentation, was, in its compressed state, not more than $2\frac{1}{2}$ inches. Hence we judged the conjugate diameter of the pelvic brim not to exceed this. The infant was large, and rather above the usual size. It weighed 8 lb. On afterwards examining the head and removing the scalp, no fracture could be found at the seat of the indentation. The thin parietal bone had merely bent inwards.¹

"On questioning the patient after her delivery, she declared that she was quite unconscious of pain during the whole period of the turning and extracting of the infant, or, indeed, from the first minute or two after she first commenced to breathe the ether. The inhalation was discontinued towards the latter part of the operation, and her first recollections on awaking were 'hearing,' but not 'feeling,' the head of the infant 'jerk' from her (to use her own expressions), and subsequently she became more roused by the noise caused by the preparation of a bath for the child. She quickly regained full consciousness, and talked with gratitude and wonderment of her delivery, and her insensibility to the pains of it. Next day I found her very well in all respects. I looked in upon her on the 24th (the fifth day after delivery), and was astonished to find her up and dressed, and she informed me that on the previous day she had walked out of her room to visit her mother. Mr. Figg informs me that her further convalescence has been uninterruptedly good and rapid."

¹ The skull and casts of the infant's head are preserved in the Obstetrical Museum in the University of Edinburgh, and were exhibited at the meeting.

INAUGURATION OF THE ANÆSTHETIC ERA.

"Abundant evidence," Simpson had said, in publishing his *Notes*, "has of late been adduced, and is daily accumulating, in proof of the inhalation of sulphuric ether being capable, in the generality of individuals, of producing a more or less perfect degree of insensibility to the pains of the most severe surgical operations." The first public evidence of the anæsthetic property of ether had been given three months previously in the Massachusetts General Hospital, of Boston, U.S.A., by William Thomas Green Morton; and our Transatlantic brethren did well to choose the 16th of October last to celebrate the Jubilee of the Inauguration of the Anæsthetic Era in Medicine. For it was on the 16th of October, 1846, that Dr. Morton put to sleep a man on whom Dr. J. J. Warren, the senior surgeon of the hospital, operated for a vascular tumour under the jaw with complete success. Mr. Morton was a dentist, on whom some years later the Washington University of Medicine in Baltimore worthily conferred the honorary degree of M.D. Mr. Horace Wells, of Hartford, Connecticut, who had had Morton first as a pupil and afterwards as a partner in his profession, had demonstrated two years earlier that insensibility to pain could be produced by the exhibition of nitrous oxide gas, sufficient to admit of painless tooth-pulling; but he failed to satisfy the Boston surgeons of the possibility of its systematic employment either in dentistry or general surgery. Dr. Charles Thomas Jackson, professor of chemistry in Harvard University, had made known to Dr. Morton the virtue of sulphuric ether, when the latter was zealously trying to follow up the experiments of Horace Wells. Unseemly disputes arose among them and others who claimed to have forestalled them. But as the mists of controversy cleared away, it became evident that to Morton belonged the chief merit of the discovery, although he had dimmed his fair fame by taking out a patent and trying to make a trade of it.

It was needful that someone else should arise to convince alike the profession and the public of the value of anæsthetics, and to secure their use in all the exigencies of practice; and Sir William Fergusson was well within the mark when he said—"It was at least fortunate for anæsthesia that Simpson took it up." Ere humanity could reap the benefit of the discovery, a hard battle had to be fought against ignorance, apathy, and prejudice, and James Young Simpson was the protagonist in the scene.

THE HERO IN THE STRIFE.

The story of his life may be read in full in the excellent *Memoir* written in 1873 by his learned friend, Professor Duns, or in the more recent vivid sketch in the series of *Famous Scots*, from the pen of his talented daughter. The earliest notice of him occurs curiously enough in the first of two volumes, which I show you now, containing a record of all the cases of midwifery that occurred in the practice of Mr. Dawson, surgeon in the village of Bathgate in West Lothian, where Simpson was born in 1811. It reads—"275. June 7. Simpson, David, baker, Bathgate. Wife, Mary Jarvey, æt. 40. Lab. nat., easy, rapid. 8th child. Son. Natus 8 o'clock P.M. Uti veniebam natus. Paid 10/6."

HIS FOREBEARS.

David Simpson came of a race which in earlier generations furnished moss-troopers for border raids, and in more recent times had earned their bread by the hard toil of farmers, quarrymen, and other like peaceful avocations. David's father was a farmer, shrewd and energetic, and renowned in the countryside for his skill in the management of cattle and their diseases. There was a strong streak of superstition in him that came out in various ways. Thus, when a beggar woman who was wont to be wheeled in a barrow from one part of the parish to another had had her rest and refreshment at Slackend, he bade a servant lass wheel the old wife away. To his dismay the woman broke out, "I'll hae nae bit hizzy like that to hurl me. Gaur ane o' your five braw lads gang wi' me, or it 'll be the waur for this hoose." He remembered that his daughter had sprained her ankle when the woman had been round that way before, and taking into his head that she was a witch, he whipt a sharp piece of flint out of his pocket and drew a gash across her brow, saying, "Ah, I see what ye're noo, ye auld witch; but I've scored ye aboon the braith, and my hoose is safe."

If James Simpson inherited from his paternal forebears the tireless energy, the patient industry, the readiness for conflict, the resourcefulness in emergencies that were to be in him so signally displayed, his mother transmitted to him qualities that were not less needful for the great career before him. Along both lines happily he inherited a reverence for grace and truth, a certain fearless independence of judgment, and that "firm resolve" which Burns apostrophises as "Thou stalk o' carl-hemp in man." But it was from his mother especially

that he drew his exquisite sensitiveness to pain and tender sympathy for sufferers, his rare intuition-like power of rapid perception, his deftness of touch, his silvery voice, and the magnetic attractiveness that worked like a spell on multitudes. For Mary Jervcy was of Huguenot descent on her father's side, and among her maternal ancestors she counted kin with some of the gentlest of Scottish blood. In particular the family took delight in tracing back their pedigree to James Cleland of that ilk, who was cousin to Sir William Wallace, and one of his henchmen in the Scottish wars with "proud Edward's power," which, happier than his kinsman, he lived to see broken when he followed Bruce to Bannockburn. She was 40 years of age when she gave birth to her seventh son and youngest child, and she continued to suckle him till he was 3 years old; so that when people would be speaking of their earliest memories he sometimes astonished a fitting company by saying he remembered when he was weaned.

HIS BOYHOOD.

In Scotland a seventh son is ever an object of peculiar interest, and the winsome boy who occupied this place in the baker's house seemed at once to bring good fortune with him. Things began to amend in business after he appeared, and the sister who played for many years a mother's part to him proudly foretold his future greatness. As a child he must have been of cherubic innocence. The brother immediately above him in the family would tell how James came to him one day with great glee to show him a halfpenny that his quick eye had discovered under a stone in the corner of Gideon Street. "My, I wouldna like to be you," said David, with a very grave face. "Glowd-ma-grannie 'll hae put it there." (Glowd-ma-grannie was the nickname of the village character who was the terror of the small boys and the butt of the bigger lads of that generation in Bathgate.) "If *he* finds out wha took his bawbee, you'll catch it." The little innocent went and slipped back the coin under the stone, where, of course, David found it by and by. Probably the disappointment was sweetened by one or two of the sugar-balls in which the halfpenny would be invested. That he could acquit himself well in boyish accomplishments may be gathered from the circumstance that when he was careering on stilts once in the gloaming he sent old John Crawford home in a fright, declaring to his household that he had "seen Jamie Simpson's wraith fleeing yont Jervcy Street."

The head that, when it came to full development, was to be

described, with its long wavy locks, as "Jove-like," was already noted in the youth to be of extraordinary size. When on a visit to his oldest brother at Grangemouth, the village barber there cropped his hair so close that his brother went to remonstrate with the man, who pled that the "callant had sic a muckle heid, I was daein' my best to mak' it look respectable."

STUDENT AND GENERAL PRACTITIONER.

As in many a Scottish homestead where love reigns, some of the older members stinted themselves to secure the education of the bright young brother who was the sunshine of their home. He learnt so much in his native town as to be able to profit by two years' attendance at the arts classes in the University of Edinburgh, and acquired a taste for literature, and especially such a knowledge of Latin as made it a delight for him in after years to hunt through all kinds of antique volumes to find out what had been known in former times on the many matters that came to engage his interest. For whether the subjects he treated of were more general, or more strictly professional, even when he was obtaining some new outlook and moving on to fresh lines of discovery, he was always eager to trace out the way along which the human mind had travelled; and many of his essays thus form a storehouse of reference for the history of their themes.

When he had studied medicine for three years he was able to obtain the diploma of the Royal College of Surgeons at the age of 18, and was thus qualified to apply for a situation as surgeon to the village of Inverkip. He has said that if chosen he would probably have worked on there as a village doctor all his days. That is not at all likely, but we can well believe him when he says—"When not selected, I felt perhaps a deeper amount of chagrin and disappointment than I have ever experienced since that date."

He spent a season in working sometimes with his friend, Dr. Girdwood, in Falkirk, and more frequently with the family doctor, Mr. Dawson, in Bathgate. The worthy doctor was glad to have his aid in looking after some of his patients and making up their prescriptions, and occasionally got opportunities for him to make the *post-mortem* examinations which his spirit of scientific investigation prompted him to seek. In one case the old doctor pointed out to him a fistulous opening which had resulted from a central rupture of the perineum during labour, and on the way home remarked that

it would have made a fine preparation. "I thought so," said his young assistant, "and I've got it in my pocket." He had a woodcut made of it years afterwards to illustrate his lectures, and here is the preparation still. In making his visits in the country he took note of the antiquities and natural history of the district, and made a special note of a bed of *Senecio saracenicus* growing at Kirkroads, near the site of an old Cistercian monastery—a plant which is said to have only one other habitat in Scotland.

Perhaps his experiences revealed to him that the department of the healing art in which he was most defective was what to a general practitioner is the all-important department of midwifery. He had a keen scientific bent, greatly fostered by association with his fellow-townsmen and room-mate in their college days, Dr. John Reid, who afterwards became Professor of Physiology in St. Andrews; and, as the midwifery lectures were not delivered till between three and four in the afternoon, he told me that, when he attended Professor Hamilton in 1829-30, he regularly went off to sleep. Hence, when he returned to Edinburgh to fit himself for taking the University degree of M.D., he attended three of the courses of lectures given by Dr. Thatcher, one of the extra-mural lecturers who was afterwards a rival in his contest for the chair. With this exception, he had given no special attention to the sphere of medicine with which his name was to be for ever associated, and at the time he attended Thatcher's lectures he was acting as first assistant to Dr. John Gairdner, who said of him that "his abilities and attention promise the most flattering expectations."

HIS FIRST SITUATION.

The subject of the thesis which he had to submit for the obtaining of the doctorate, in 1832, was a pathological one—*De causâ mortis in quibusdam inflammationibus proximâ*—written, according to the custom of the time, in Latin. This thesis fell into the hands of Dr. John Thomson, who had been appointed to the chair of pathology, founded at his own instance just a year previously. Professor Thomson, father of William and Allan Thomson, who filled with such distinction the chairs respectively of practice of physic and anatomy in the University of Glasgow, was so struck with the ability of the young graduate that he offered him the position of assistant at a salary of £50 a year. It was his first offer of a definite position and was gladly embraced. He had not only to assist the professor in the arranging of his museum and writing

descriptions of his preparations and drawings, but also in the composition of his lectures. On one occasion he had written, at the request of his "chief," part of a lecture dealing with microscopic observations which were then quite novel. His young enthusiasm led him to write strongly of the importance of these researches, and of the light which the use of the microscope was likely to throw on various pathological problems. It was only ready in time for the professor to take into the class-room without previous perusal. Several times as he read the lecture to the class he looked up from his paper to glower at his assistant; and when they got to the side-room he shook his fist in his face, saying, "I don't believe one—word of it." But though Thomson was sceptical as to the value of the instrument that was to revolutionise his science, he had the shrewdness to recognise the rare gifts of his young assistant, and when he was unable to conduct his course in the session 1837-38, he got Simpson appointed as interim lecturer.

BECOMES OBSTETRICIAN.

He it was who first pointed out that in the sphere of midwifery Simpson would find the most fitting field for the exercise of his faculties; and, through the kindness of Dr. Moir, I can show you the note with which he furnished the student graduate when he advised him to get the profit of another course of the lectures of his colleague, Professor Hamilton. It reads:—

"MY DEAR SIR,—I beg leave to introduce to you the bearer of this note, Dr. James Simpson, an old pupil of your own, who has acted as my amanuensis for a long time. He is desirous to attend your lectures this winter, and I shall feel particularly obliged to you if you will have the goodness to give him a ticket for that purpose, and shall be happy in an opportunity at any time of obliging you in a similar manner.—Yours faithfully,

"JOHN THOMSON.

"80 GEORGE STREET,
19th November, 1833."

It was thus not till he had been for more than a year a graduate that he set himself earnestly to master midwifery, and busy though he necessarily was with pathology, by the time he had to read a dissertation to the Royal Medical Society in November, 1835, he produced a work on *Diseases of the Placenta*, which is still a classic. In 1838 he began an

independent course of lectures on his chosen theme, and felt so confident of success that as the professors entered on one occasion for the "capping," which he had taken some lady friends to see in the University, he pointed to Prof. Hamilton and said, "Do you see that old gentleman?—well, that's my gown." On the 4th of February, 1840, the sagacious Town Council gave him the right to wear it, and commissioned him to teach midwifery and the diseases of women and children. When my father told Dr. Dawson of the happy event, the old man only said, "It's all very well to have got his chair. But you know he can never have such a practice as Prof. Hamilton. Why, ladies have even been known to come from England to consult him." Happily he lived long enough to see ladies begin to come from the ends of the earth to consult Hamilton's successor.

PROFESSOR OF MIDWIFERY.

When Simpson took up the duties of that chair, it soon became manifest that a master mind had begun to deal with midwifery and the diseases of women. If it has been truly said that "he gave a new life to Obstetric art and science," it may be said that as for Gynæcology he presided at its birth. It was born *eo obstetrice*. His genius showed itself (1) in his power of seeing things; (2) in his power of adapting means to ends; and (3) in his power of making others see what he had seen, and do what he had done. Let me illustrate this, first from the obstetric, and then from the gynæcological department of his work.

Here is the cast of the head of a child which he helped Dr. Burns to deliver by means of Murphy's craniotomy forceps. After breaking up the skull he left the patient, according to the then common practice, to allow the uterus to recover its tone, and to give time for the commencing swelling of the passages to subside. Returning in a few hours, he found to his surprise that the head had already descended through the narrow brim, and the child was easily extracted. Surely such an occurrence was not novel. But Simpson saw it. He saw that unintentionally he had fractured the occiput close to the foramen magnum. He reasoned that if we could in every case fracture the base of the skull, the extraction of the head would be facilitated, and he set himself to contrive the cranioclast. As soon as he had proved its efficacy he published an account of it, and, as modified by Braun of Vienna, it speedily superseded all previous methods of reduction of the head.

In this jar you see a preparation of a uterus containing a

fibrous polypus, the neck of which is in process of separation, resulting in a fatal hæmorrhage. Aided by the sound, which he had not long previously invented, he and his friend Dr. Alexander Wood, who had called him in to see the patient, formed a shrewd guess as to the cause of the patient's floodings; but they were not allowed to use any means to get at the seat of mischief. It would, I presume, be now impossible to obtain such a preparation, for Simpson saw how that life might have been rescued if only they had had the power of opening up the cervix, and he contrived the now familiar sponge-tent for the purpose. Of course, other methods of dilating the canal have also been employed since then, but until Simpson saw that uterus, and showed how simply such patients could be cured, the writers on female diseases spoke of the *diagnosis* even of intra-uterine polypus as always doubtful, and in most instances impossible. Nothing more easy now both to recognise and to remove. He never kept anything secret that he thought could help his fellows, and it is hard to say whether his delight was greater in finding some new means to cure disease, or in demonstrating to others his methods of treatment.

The note-books of his student days are studded with points of interrogation attached to the dicta of his teachers. After he began to have Nature for his teacher, he questioned her at every turn, and ever and anon she yielded up to him some secret.

HIS VERSATILITY.

Surely there never was another to whom so many practitioners came to get new lessons in the healing art. For more than a quarter of a century, hardly a day, and never a week passed without bringing doctors to the house, to whom he had something fresh to show. The country doctor who came with a patient was shown others with kindred ailments, saw how they were being treated, and went back to his solitary sphere with new confidence and success. The foreign professor, who had been doubtful as to some procedures, came and stayed for a week or two, till he was satisfied of their feasibility, and returned to put them in practice, and teach them to his students. Younger men would come from all quarters, both of the old world and the new, to spend sometimes weeks, and sometimes months together, studying his principles and observing his practice, and then go to propagate them everywhere.

I do not attempt to speak of the work he did outside his profession, in archæology; in literature; in politics, local and imperial; in university and medical reforms; and in many

varieties of philanthropic enterprise. The great brain was never at rest, and found its recreation only in change of interest. Within the range of his profession his interests were not confined to the special department of his chair. Foreigners working in the sphere of surgery sometimes spoke of him as a surgeon. His old master, Professor Thomson, had told the Town Council of his day that he was "fully qualified to conduct the business of the pathology class;" and when Alison died in 1854 there were many who wished he would take the chair of practice of physic. Ere the day of anæsthesia dawned he had begun to vivify midwifery and to bring gynæcology into being as a science. Had he never lulled for woman her travail pangs, his name would still have been written among the immortals in his art. "Gifted," said his colleague, Professor Miller, "with talents that are given to few; armed with a zeal and enthusiasm which are absolutely indefatigable; restless and eager, yet withal careful and scrupulous in his research for truth; full of a pure and large-hearted benevolence—he has made many discoveries and improvements in his profession, which are of themselves well capable of transmitting his name safe and honoured to posterity. But all are eclipsed in this his latest and his best. We admire his talents; we praise his zeal; we rejoice in his success; and while we honour his genius, we love the man."

ONE OF HER MAJESTY'S PHYSICIANS.

Before the news came from America that surgical operations might be carried out painlessly on patients narcotised with ether, his high position in the profession had been acknowledged in the highest quarters. Just at that time one of Her Majesty's physicians for Scotland died, and the Duchess of Sutherland, Mistress of the Robes, requested of the Queen to appoint Dr. Simpson to the vacant office. While he was conducting his first anæsthetic labour, this letter from Her Grace was on its way to Edinburgh:—

"STAFFORD HOUSE,
"January 18th.

"DEAR SIR,—It was a great pleasure to me to receive yesterday a letter from the Queen, telling me that she should have much pleasure in complying with the request 'which his high character and abilities make him very fit for.' The Queen adds that it will be officially communicated to you.—I remain, Dear Sir, yours very truly,

"HARRIET SUTHERLAND."

The contents of Her Grace's note he communicated to his brother on the Friday following, the 22nd, in a letter which was never meant to be read beyond the family circle, but from which I quote two characteristic sentences:—"Flattery *from the Queen* is perhaps *not* common flattery, but I am far less interested in it than in having delivered a woman this week *without* any pain while inhaling sulphuric ether. I can think of naught else."

PREPARED TO WELCOME DISCOVERY OF ANÆSTHESIA.

This utterance reveals to us a quality which made him welcome with a peculiar eagerness the new discovery, and expend all his energies for its development—that is his delight in the lessening of pain. The great strong brain was matched with a great tender heart. In his student days he was so distressed with the screams and groans of a poor Highland woman on whom Liston was performing excision of the mamma, that he quitted the Infirmary in sadness, and betook himself to the Parliament House. He thought of seeking work in some writer's office. On further reflection he returned to the scenes of suffering, with the problem pressing on his heart and mind how the pains might be relieved. In lecturing to students or addressing graduates he never wearied in insisting that "the proud mission of the physician is distinctly twofold—viz., to alleviate human suffering as well as to preserve human life." Ten years before the anæsthetic virtue of ether vapour was made known, whilst he was first establishing himself in practice, he made experiments with hypnotism, which Abercrombie, Alison, and other leaders of the profession came to his hospital to see. So when the news reached Edinburgh in 1846 that Liston had performed some operations on patients narcotised with ether, Simpson immediately began to enquire whether in the inhalation of sulphuric ether there might not at length be found the means he had been dreaming of for years of soothing the most agonising pains to which humanity is subject, the pains he had so often to watch with pitying helplessness—the pains of woman in travail.

FIRST MIDWIFERY CASE SELECTED FOR SCIENTIFIC EXPERIMENT.

The idea of surgical anæsthesia was not new. It was easy to believe that a means had at last been found of producing it. But to put to sleep a woman in labour is another and a

new idea. In realising it problems have to be faced that do not meet the surgeon. Bigelow, of Boston, and Liston, of London, for example, had the fancy that the benefits of anæsthesia in surgery would be principally seen in the practice of swift operators who had remarkable powers of execution, and in whose hands the patient would be for the briefest possible space under the influence of the anæsthetic. If it was to be used in midwifery at all it would require prolonged administration. That and other problems had to be met, and ere Simpson entered on the field it is very worthy of note that, eager as he was to prove the virtue of the new anodyne, he was careful to select a case that was fitted to afford a solution of the most important of the problems. The case, as we have seen, was one of deformed pelvis, in regard to which he says, "I had predetermined to extract the child by turning, and to try the inhalation of ether vapour upon the mother, with a view to facilitate that operation. During a week or two previously, I had anxiously waited for the supervention of labour in this patient; for, by the result I expected that much would be decided in regard to ether-inhalation in parturition. Would it merely avert and abrogate the sufferings of the mother without interfering with the uterine contractions? or, would it arrest simultaneously both the contractions of the uterus and the sufferings that arise from them? As far as the proposed mode of delivery by turning was concerned, it was a matter of no vital importance whether the etherisation stopped the uterine contractions or not. And on this circumstance depended the eligibility of the case for a first trial of ether-inhalation. The result was most satisfactory and most important; for it at once afforded me evidence of the one great fact upon which the whole practice of anæsthesia in midwifery is founded—it proved, namely, that though the *physical sufferings* of the parturient patient could be annulled by the employment of ether-inhalation, yet the *muscular contractions* of the uterus were not necessarily interfered with; or, in other words, that the labour might go on in its course although the sensations of pain usually attendant upon it were for the time being altogether abrogated."

CONCLUSIONS FROM SERIES OF OBSERVATIONS.

Having satisfied himself from his careful observation of this case that ether could avert the pains without arresting the contractions of the uterus, he proceeded to make application of it in other patients, and at the next meeting of the

Obstetrical Society, on 10th February, he was able to give the history of etherisation in some cases of natural labour, and in one forceps case. The inferences that appeared deducible from these observations he stated in the following terms:—

“1. That the inhalation of ether procured for the patient a more or less perfect immunity from the conscious pain and suffering attendant upon labour;

“2. That it did not, however, diminish the strength or regularity of the contractions of the uterus;

“3. That, on the other hand, it apparently (more especially when combined with ergot) sometimes increased them in severity and number;

“4. That the contraction of the uterus after delivery seemed perfect and healthy when it was administered;

“5. That the reflex assistant contractions of the abdominal muscles, &c., were apparently most easily called into action by artificial irritation and pressure on the vagina, &c., when the patient was in an etherised state;

“6. That its employment might not only save the mother from the mere pain in the last stage of labour, but might probably save her also, in some degree, from the occurrence and consequences of the nervous shock attendant upon delivery, and thereby reduce the danger and fatality of childbed; and

“7. Its exhibition did not seem to be injurious to the child.”

In the early experiments the patients were not kept anæsthetised for more than half an hour, but in the course of the three or four following weeks, he ascertained that anæsthesia could be safely kept up during labour for one, two, three, and even six hours.

SPREAD OF THE PRACTICE.

Having at once, as we have seen, communicated the success of his first experiment to his professional brethren, his example was followed, first in France by Fournier Deschamps, on 27th January, and then by Baron Dubois, who, on 23rd February, reported to the French Academy of Medicine the results of his experience, with the five following conclusions:—

“1. The inhalation of ether can annul the pain of obstetrical operations.

“2. It can suspend the physiological pains of labour.

“3. It destroys neither the uterine contractions nor the contractions of the abdominal muscles.

"4. It diminishes the natural resistance of the perineum.

"5. It does not appear to act unfavourably on the health or life of the infant."

In London, Dr. Murphy first, on 13th February, and Dr. Prothero Smith in March, took up the practice. In Germany the first case of anæsthetic midwifery occurred on the 24th of February, under the care of Professor Martin, of Jena. "In America," says Simpson in his report on the early history and progress of anæsthetic midwifery, "the country to which we are indebted for the first knowledge of the anæsthetic effects of sulphuric ether in surgical operations, the same agent was not employed in midwifery till the reports of its use in obstetric practice in Europe had recrossed the Atlantic." It was on the 7th of April that it was first employed in a case of labour by Dr. Keep, of Boston.

INTEREST OF THE COMMUNITY IN ANÆSTHESIA.

In surgical practice the superinduction of anæsthesia was already meeting with opposition, which became only the more pronounced when it began to be employed in the practice of midwifery. In Edinburgh, in the early days of anæsthesia, many of the citizens found their way to the operating theatre in the Royal Infirmary, "among them," says Professor Miller, "the great, the good, the singularly humane Chalmers, and it was one of the early triumphs of anæsthesia here to see that man of large and tender heart witnessing a bloody and severe operation with composure and serenity, feeling little because the patient felt not at all."

OPPOSITION TO ANÆSTHESIA.

But all are not gifted with the open mind and the large heart of a Chalmers. Objections began to be heard on every hand that the novel practice was unnecessary, was dangerous, was impious, and that no good could come of it; and the loudest and most persistent objectors were found strangely enough among members of the profession, which, through all the ages, had been trying to lessen the sufferings of mankind. On the man who first dared to apply it for the relief of the pains of labour, fell the task of enlightening ignorance, of disarming prejudice, of dispelling superstition, and of vindicating for surgeons and accoucheurs the right to give, and for sufferers to claim, the ease that anæsthesia was calculated to afford.

RELIGIOUS OBJECTIONS.

To some minds it seemed that the proposal to still the sufferings of a parturient woman was to run counter to a divine command. "It has been ordered," wrote a medical opponent of the practice, "that in sorrow shall she bring forth." Simpson wrote a pamphlet in "Answer to the Religious Objections advanced against the employment of Anæsthetic Agents in Midwifery and Surgery." It is an excellent example of his polemic power, proving from Scripture that the primeval curse as it bore on woman and on the ground was not immutable. He quoted "the sound and excellent Matthew Henry, in his own quaint, pithy, and zealous style," showing "how admirably the satisfaction our Lord Jesus Christ made by his death and sufferings answered the sentence now passed upon our first patient. . . . 'Thus is the plaister as wide as the wound.'" He indicated from the study of the Hebrew roots that to lessen the attendant pain was not to lessen the labour effort that the words seemed to demand. And then he pointed out how the objections raised against the practice of anæsthesia were applicable to improvements in agricultural processes, and had been applied to many discoveries in science and art—even the healing art, as in the case of vaccination. A clergyman spoke of chloroform as "a decoy of Satan," and his friend, George Gilfillan, furnished him with evidence that when fanners first came into use, a clergyman debarred from the communion those members of his flock who used what was termed "the Devil's wind." He was amused to find soon afterwards one of his students, a son of De Quincey, in his graduation thesis rebuking the unmarried ladies who stood up for what they thought was the divine law, and who insisted on their parturient sisters suffering according to the letter, in this fashion:—"The unhappy and wicked woman who remains unmarried appears to break the command herself in four several ways, according to the following tabular statement:—

- "1. She has no conception.
- "2. She brings forth no children.
- "3. Her desire is not to her husband.
- "4. The husband does not rule over her."

It pleased him to find De Quincey himself, in a letter appended to the thesis of his son, arguing that "if pain, when carried to the stage which we call agony or intense struggle among vital functions, brings with it some danger to life, then it will follow that knowingly to reject a means of mitigating or wholly cancelling the danger, now that such means has

been discovered and tested, travels on the road towards suicide. It is even worse than an ordinary movement in that direction; because it makes God an accomplice, through the Scriptures, in this suicidal movement, nay, the primal instigator to it, by means of a supposed curse interdicting the use of any means whatever (though revealed by Himself) for annulling that curse."

MORAL OBJECTIONS.

Besides the religious objections, there were what he was wont to speak of in his lectures as the moral objections. These in their various expressions were all based on the idea that the practice was unnatural. This idea, pervading the general community, and likely to prevent sufferers from obtaining the benefit of the new discovery, was vigorously championed by the various medical authorities who took it upon them to write down anæsthesia. Professor Meigs thought it "unnecessary, as shown by the birth of past myriads." Dr. Merriman spoke of "the great superiority of allowing nature to conduct the whole process of the birth." Dr. Ashwell decried it as an "unnecessary interference with the providentially arranged process of labour." Dr. Montgomery, the then chief of the great Dublin School of Midwifery, wrote during the session a letter to Edinburgh, in which he said, "I do not believe that anyone in Dublin has as yet used ether in midwifery; the feeling is very strong against its use in ordinary cases, and merely to avert the ordinary amount of pain which the Almighty has seen fit—and most wisely we cannot doubt—to allot to natural labour, and in this feeling I heartily and entirely concur." I have before me the sheet from his lecture-notes, on which Dr. Montgomery's letter had been copied by Dr. Matthews Duncan, who was then junior assistant to Professor Simpson. Above the words "ether," "midwifery," &c., the professor has marked alternative readings. He would take one of these, suggestive of a doctor making his daily round among his patients, and ask you to imagine Dr. Montgomery writing, "I do not believe that anyone in Dublin has as yet used a carriage in locomotion; the feeling is very strong against its use in ordinary progression, and merely to avert the ordinary amount of fatigue which the Almighty has seen fit—and most wisely we cannot doubt—to allot to natural walking, and in this feeling I heartily and entirely concur."

MEDICAL OBJECTIONS.

Then there were various objections of a more distinctly medical kind. It was alleged that the use of anæsthetics

would increase the mortality of surgical operations. Simpson wrote papers full of laboriously collected statistics, which proved that while before the introduction of anæsthesia, in every 100 cases of amputation of the thigh performed in our hospitals, from 40 to 50 of the patients died, the same amputation when performed upon anæsthetised patients did not prove fatal to more than 25 in the 100 cases; or, in other words, that out of every 100 such operations the previous induction of anæsthesia was the means of preserving 15 or 20 human lives.

When obstetricians alleged that no good was gained by the relief of suffering, and when Meigs, for example, went so far as to speak of pain as “a desirable, salutary, and conservative manifestation of life-force,” Simpson turned to the reports of the Dublin Lying-in Hospital, and showed that out of all the women—7,050 in number—who were delivered within two hours from the commencement of labour only 22 died, *or 1 in every 320*; whereas in 452 cases where the labour was prolonged above *twenty* hours, 42 of the mothers died, *or 1 in every 11*; “a difference,” as he said, “enormous in amount and strongly calculated to force us all to think seriously and dispassionately of the effects of severe suffering upon the maternal constitution.”

When it was alleged further that the use of anæsthetics might produce mental derangement, convulsions, paralysis, pericarditis, puerperal fever, and other mischiefs, he showed from the results of a constantly widening practice, the futility of such fears; and in regard to some of these complications of labour, and notably in regard to convulsions, experience eventually showed that so far from causing convulsions, the practitioner had been furnished in the administration of chloroform with his most reliable remedy.

The mention of chloroform reminds me that I have been anticipating.

IS SULPHURIC ETHER THE ONLY ANÆSTHETIC?

The mind that had riddled the student note-books with points of interrogation was bound to enquire whether nature had not concealed among her treasures some other agent that might be possessed of the anæsthetic properties of sulphuric ether, without some of its attendant drawbacks. Ether, he noted, required to be administered in large quantities, especially in protracted cases of labour. It occasionally gave rise to bronchial irritations. Its odour was disagreeable and persistent, and hung for long about an accoucheur who had delivered a woman under its influence. He began to enquire

whether other anodyne drugs could not be administered through the lungs, and got the chemists, Duncan, Flockhart & Co., to prepare ethereal tinctures and other vaporisable compounds of various potent sedatives for purposes of experiment. The researches he had made into the history of painless surgery quickened the expectation that other gases or volatile liquids might yet prove serviceable. He talked the matter over with various professional friends more conversant with chemistry than himself, with teachers of chemistry, with practical chemists and druggists. He was led to make experiment on the inhalation of various liquids that seemed more fragrant and agreeable than ether, such as acetone, nitrate of oxide of ethyle, benzin, the vapour of iodoform, &c. Prof. Gregory suggested chloride of hydro-carbon (Dutch liquid), which he tried on himself with dangerous consequences. Mr. Waldie, a Linlithgowshire friend who was in business as a chemist in Liverpool, suggested the terchloride of formyle. A small quantity of it was procured from Duncan, Flockhart & Co., but it seemed a heavy unvolatile-like liquid, and for the time was set aside. He had Dr. George Keith and Dr. Matthews Duncan as his assistants at the time, and he gladly expressed his indebtedness to them "for the great and hearty zeal with which they constantly aided him in conducting the inquiry." They used to put a teaspoonful of the liquid which they were testing in the bottom of a tumbler, cup, or saucer, or finger-glass. If it was not sufficiently volatile the vessel was placed in hot water. The mouth and nostrils were held over the mouth of the vessel and inhalation slowly proceeded with, and notes taken of the effects.

DISCOVERY OF ANÆSTHETIC VALUE OF CHLOROFORM.

Prof. Miller, who lived next door in Queen Street, and looked in nearly every morning at "52" before starting on his rounds at 9 o'clock, has described the circumstances of the eventful evening when chloroform yielded up the secret of its subtle power in a graphic page, which furnishes a trustworthy record of the discovery. It reads:—

"Most of these experiments were performed after the long day's toil was over—at late night or early morn; and when the greater part of mankind were soundly anæsthetised in the arms of common sleep. Late one evening—it was the 4th of November, 1847—on returning home after a weary day's labour, Dr. Simpson, with his two friends and assistants, Drs. Keith and J. M. Duncan, sat down to their somewhat hazardous work in Dr. Simpson's dining-room. Having inhaled several

substances, but without much effect, it occurred to Dr. Simpson to try a ponderous material, which he had formerly set aside on a lumber-table, and which, on account of its great weight, he had hitherto regarded as of no likelihood whatever. That happened to be a small bottle of chloroform. It was searched for, and recovered from beneath a heap of waste paper. And, with each tumbler newly charged, the inhalers resumed their vocation. Immediately an unwonted hilarity seized the party, they became bright-eyed, very happy, and very loquacious—expatiating on the delicious aroma of the new fluid. The conversation was of unusual intelligence, and quite charmed the listeners—some ladies of the family and a naval officer, brother-in-law of Dr. Simpson. But suddenly there was a talk of sounds being heard like those of a cotton-mill, louder and louder; a moment more, then all was quiet, and then—a crash. On awakening, Dr. Simpson's first perception was mental—'This is far stronger and better than ether,' said he to himself. His second was, to note that he was prostrate on the floor, and that among the friends about him there was both confusion and alarm. Hearing a noise, he turned round and saw Dr. Duncan beneath a chair—his jaw dropped, his eyes staring, his head bent half under him; quite unconscious, and snoring in a most determined and alarming manner. More noise still, and much motion. And then his eyes overtook Dr. Keith's feet and legs, making valorous efforts to overturn the supper-table, or more probably to annihilate everything that was on it; I say, more probably, for frequent repetitions of inhalation have confirmed, in the case of my esteemed friend, a character for maniacal and unrestrainable destructiveness, always under chloroform, in the transition stage. By and by, Dr. Simpson having regained his seat, Dr. Duncan having finished his uncomfortable and unrefreshing slumber, and Dr. Keith having come to an arrangement with the table and its contents, the *sederunt* was resumed. Each expressed himself delighted with this new agent; and its inhalation was repeated many times that night—one of the ladies gallantly taking her place and turn at the table—until the supply of chloroform was fairly exhausted."

Miss Agnes Petrie, the niece who shared in the experiment, amused them by folding her arms across her bosom before she fell quite asleep, and exclaiming "I'm an angel! oh, I'm an angel!" They sat up till 3 A.M., after the vial was empty, searching works on chemistry for its composition and best methods of preparation. Next day, Mr. Hunter, of Duncan, Flockhart & Co., began that distillation from a retort, which has grown in the hands of the firm to be one of the great

industries of Edinburgh. When a few days later Professor Miller offered Simpson an opportunity of administering chloroform to an infirm patient on whom he was to operate for strangulated hernia, Simpson was unable to attend, and it happened, as has sometimes been seen in other surgical cases, that when the skin had been cut through, the patient fainted and died before the operation had been well begun. On the 10th of November Simpson formally communicated his discovery to the Medico-Chirurgical Society at its first meeting for that session, and when his communication was published, in pamphlet form, with a postscript on 15th November, he was able to announce that he had exhibited the chloroform to about fifty individuals "without the slightest bad result of any kind."

THE FIRST CHLOROFORM LABOUR.

As was to be expected, one of the first to experience the relief from suffering afforded by the new anæsthetic was a parturient patient; and he gave at that meeting of the Medico-Chirurgical Society the following history of the case:—

"The lady to whom it was first exhibited during parturition had been previously delivered in the country by perforation of the head of the infant, after a labour of three days' duration. In this, her second confinement, pains supervened a fortnight before the full time. Three hours and a half after they commenced, and ere the first stage of the labour was completed, I placed her under the influence of the chloroform, by moistening, with half a teaspoonful of the liquid, a pocket handkerchief, rolled up into a funnel shape, and with the broad or open end of the funnel placed over her mouth and nostrils. In consequence of the evaporation of the fluid, it was once more renewed in about ten or twelve minutes. The child was expelled in about twenty-five minutes after the inhalation was begun. The mother subsequently remained longer soporose than commonly happens after ether. The squalling of the child, did not, as usual, rouse her; and some minutes elapsed after the placenta was expelled, and after the child was removed by the nurse into another room, before the patient awoke. She then turned round and observed to me that she had 'enjoyed a very comfortable sleep, and indeed required it, as she was so tired,'¹ but would now be more able for the work before her.' I evaded entering into conversation with

¹ "In consequence of extreme anxiety at the unfortunate result of her previous confinement she had slept little or none for one or two nights preceding the commencement of her present accouchement."

her, believing that the most complete possible quietude forms one of the principal secrets for the successful employment of either ether or chloroform. In a little time she again remarked that she was afraid her 'sleep had stopped the pains.' Shortly afterwards, her infant was brought in by the nurse from the adjoining room, and it was a matter of no small difficulty to convince the astonished mother that the labour was entirely over, and that the child presented to her was really her 'own living baby.' "

Seventeen years afterwards his friend, Dr. Adamson, of St. Andrews, sent Simpson this charming photograph that had just been taken by Rogers of a young lady. The accompanying letter told that it was a photograph of the baby of his first chloroform patient, and as you mark the mild angelic air that rests upon the upturned face above the folded hands, you will understand why Dr. Adamson suggested that it might stand for a picture of Anæsthesia, and that it was a pity the girl had not been called by that name.

Simpson believed that he had discovered in chloroform an anæsthetic that possessed various important advantages over ether, "particularly in obstetric practice; and that, in particular, it is far more portable, more manageable and powerful, more agreeable to inhale, is less exciting than ether, and gives us far greater control and command over the superinduction of the anæsthetic state." His interest in the new anodyne gave additional zest to the eagerness and energy with which he had set himself to demonstrate the right, and even the duty, of surgeons and accoucheurs to make use of anæsthetic agents; and he did not cease his efforts until he had seen the importance of anæsthesia fairly recognised, and such an impetus given to surgical progress as it had never before received, and such as has only been rivalled since when Lister—praised be the Queen who has raised him to the peerage—inaugurated the Antiseptic Era.

DANGERS OF ANÆSTHESIA.

Of the anæsthetics that have been proposed for use in practice, three alone at the present hour promise to hold an abiding place—nitrous oxide gas, first used by Horace Wells in 1844; sulphuric ether, introduced by William Thomas Green Morton in 1846; and chloroform, the anæsthetic power of which was proved and promulgated by James Young Simpson in 1847. The fatalities that have attended the administration of each of them have led to a continuous search for some agent that might possess their power without their danger. Simpson

to the end hoped that such a discovery might be made. The last time he had a pen in his hand he wrote of anæsthetic agents, and said—"In all likelihood some will yet be discovered of types superior to any we yet know." When Dr. Snow, who did so much to perfect and promote the practice of anæsthesia, proposed the use of amylene, his proposal was eagerly welcomed. I remember well the enthusiasm with which Professor Tourdes, of Strasburg, invited me to hear a lecture on the new agent in the spring of 1857. When he had sufficiently discoursed on the drawbacks and dangers of ether and chloroform, he proceeded to demonstrate the ease and safety with which a rabbit could be brought under the influence of amylene, and, whilst he still praised the new agent, when he lifted the bag off its face—the creature was dead. In 1883, I was present at the Obstetrical Section of the Naturforscherversammlung in Freiburg, when Professor Bandl proposed the use of bichloride of methylene as a substitute for chloroform in labour. Professor Hegar, the president, winding up the discussion, said—"Yes, gentlemen, we try anything, everything, but in the end we always come back to chloroform."

It is still a subject of discussion whether ether or chloroform is to be preferred as an anæsthetic. Individual minds and groups of minds have inclined to favour now the one, and now the other. In Professor Ernst Fraenkel's *Tagesfragen der Operativen Gynäkologie*, which came to hand a few weeks ago, we read, "Convinced adherents of chloroform have grown to be enthusiastic advocates of ether, and then gradually and very quietly turned back into the camp of the chloroformists." What we must all recognise and remember is that no anæsthetic has yet been found regarding which we can affirm that it is free from danger; and in each individual case we must choose the agent that seems best adapted to it. In general we see that Wells' nitrous oxide finds its chief sphere of application in the dentist's office; that surgeons who have command of time, assistants, and apparatus may make use of Morton's sulphuric ether; while the surgeon on the battlefield, the general practitioner in his busy round, and the obstetrician in the lying-in room find themselves best served by Simpson's chloroform.

SIMPSON'S GREATEST DISCOVERY.

Any sketch of the man, whose services to anæsthesia we have considered, would be incomplete that took no notice of what was to him the most important incident in his life. One who asked of him in his last days, "What do you consider

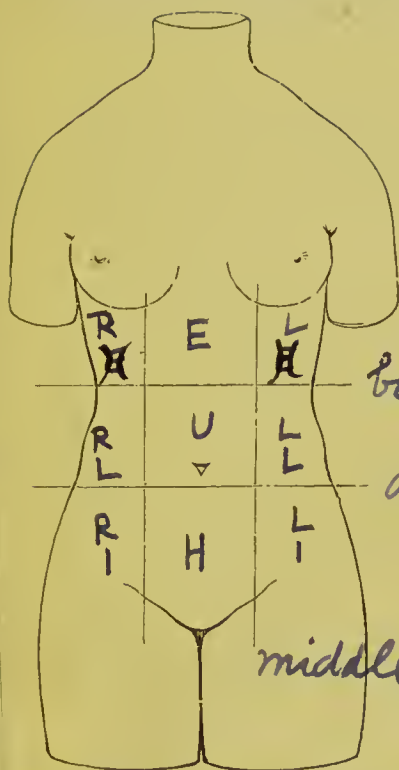
your greatest discovery?" got for reply—"That I am a sinner, and that Jesus Christ is my Saviour." That discovery came to him on Christmas Day, 1861. One of those great spiritual movements that powerfully influence a community was at that time spreading widely through the land, which had this among other characteristics, that it called out in a remarkable manner all classes of laymen, from nobles to navvies, to take part with the ordained ministers in what were then for the first time described as evangelistic meetings.

We have seen that Simpson's house was a rendezvous for all sorts and conditions of men. The strangest streams of life were constantly flowing through it. Candidates for seats in Parliament or in the Council Chamber of the city, for vacant chairs in the University, for posts in the Infirmary, for lectureships in many schools of medicine, and for pulpits in town or country—all came to seek his advice and bespeak his influence. Antiquaries came with their latest finds; artists and architects sought his opinion of their designs; poets brought him their new poems, and novelists their stories; the Arctic voyager, the African explorer, the traveller from Mecca, missionaries from all parts of heathendom, came with news and gifts of every kind. It could not be but that among the throng there should be some who told him that they had found what his friend, Dr. Hanna, called "the open secret." Salome's son, John, may have been ambitious and of a fiery temper, but he was not a bad man before the day when he heard the Baptist say, "Behold the Lamb of God," and he went and followed Jesus. Mary Jervoy's son was not a bad man before that Christmas Day when in prayer with Mrs. Barbour he saw that the babe of Bethlehem had been born to give him second birth. But it was a new man who from that time began to fence his house with family worship; and when I look into the Bible which he bought to read the Scripture from, I find that where the prophet speaks of One "wounded for our transgressions," he has pencilled above the "our" the possessive singular "my." It was consonant with the great-hearted expansiveness of the man, that he began both in private and in public to share his joy with all who cared to taste of it. His conduct has been variously judged. The simple explanation is that the love of Christ constrained him, and when I last heard him address a meeting in the Free Barony of this city in the winter of 1867-68, there was the same note of personal experience and of wonder at "the infinitude of God's love to our fallen race" which marked his first appeals.

The change in his acknowledged relation to God in no way lessened the service he still delighted to render to his fellows, but it variously affected various minds. An Edinburgh gossip asked Miss Catherine Sinclair if she had heard of his conversion, and that excellent lady replied, "If Professor Simpson has been converted, it is time some of the rest of us were seeing if we do not need to be converted."—When he presided at an evangelistic meeting addressed by Dr. Hanna, a woman said the sight of the chairman's happy face had done her as much good as a sermon.—He went to a meeting of the Royal Society in the company of his life-long friend, Dr. Skae, of Morningside Asylum, and some of the Fellows thought it a good joke to infer that Simpson had gone mad, and to send round the rumour that Skae was looking after him.—"And have you read it?" asked Dr. Andrew Wood of Father Rigg, afterwards Bishop of Dunkeld, when he told him that Professor Simpson had given him a copy of his address, entitled *Dead in Trespasses and Sins*. "Yes," said that good Catholic, "I have read every word of it." "Well, what do you think of it?" "It's the production, sir, of a genius."

When Sir David Brewster died in 1868, Sir James Simpson, who had been asked to move the resolution of regret in the Royal Society of Edinburgh, told how he had seen that "arch-priest of science passing fearlessly through the valley of death, sustained and gladdened with the all-simple, and all-sufficient faith of a very child." His words described to the letter his own departure in 1870; and if, with Sir David's gifted daughter, we try in imagination to follow these great spirits through tracts unknown, and to see on what high quests they fare forth there, we can only say with her of one as of the other—

"We see not, we see not; but this we know,
He has bowed his head with its honours low.
'Not mine! not mine!' is his whisper meet,
As he casts his crown at his Saviour's feet."



base of thorax 10th rib

ant. sup. spines of illium.

middle poupart lig

OBSTETRICAL AND GYNECOLOGICAL DIAGNOSIS.

RATIONAL (FUNCTIONAL) SYMPTOMS.

1st. LOCAL.

1. Changes in the Functions of Uterus and Appendages :
 - (1.) In the menstrual secretion.
 - (2.) In the intermenstrual secretion.
 - (3.) In the reproductive powers.
 - (4.) In sensation.
2. Changes in the Functions of neighbouring Pelvic Organs :
 - (1.) Bladder.
 - (2.) Rectum.
 - (3.) Nerves.
 - (4.) Muscles.

2nd GENERAL.

1. Changes in the Nervous System.
 - (1.) Motor.
 - (2.) Sensory.
(Common Seats of sympathetic pains.)
2. Changes in the Circulatory and Respiratory Organs.
3. „ Alimentary and Emunctory Organs.
4. „ Skin.
5. General Constitutional Derangements.

Midwifery

Diagnosis

Rational Symptoms

1st Local

1. Changes in Functions of Uterus + Appendages
- 1) In the menstrual secretion as in Amenorrhoea, Menorrhagia, Dysmenorrhoea etc
 - 2) In the intermenstrual Secretion, leucorrhoea, mucous, mucopur, + purulent -
 - 3) In reproductive powers - Dyspareunia (pain in coition) - Sterility (imperforate hymen etc etc)
 - 4) In sensation - Frequently exaggerated sometimes periodic, sometimes absent -
2. Changes in functions of neighbouring Pelvic Organs -
- 1. Bladder - Retention, incontinence, Vesicula-vaginal fistula,



2) Rectum

Constipation - (as in retroflexion). Diarrhoea by irritation set up by pressure - Also haemorrhoids by same cause

3) Nerves. Pelvic. Pain. Pressure

4) Muscles

General Symptoms

1. Nervous System (Changes in)

(2) Motor paraplegia, temporary paralysis - jerking -

(3) Sensory Anaesthesia.

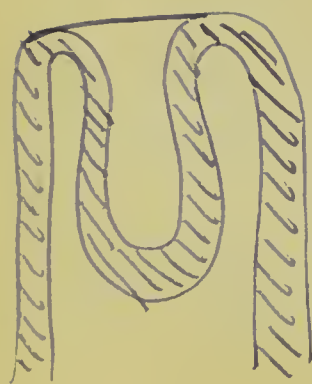
Pain in mammae - referring to tubes, uterus or ovaries - also sympathetic pain in intercostal nerves (intermammary) or pain in face or head etc etc. sometimes in extremities -

2. Changes in Circulatory & Resp Organs

swelling of Thyroid sometimes seen in pregnancy -

~~asthma~~ Asthma Uterinum -

Changes in Alimentary & Excretory Organs



c. Salivation in Preg etc.
Dyspepsia - Actual Vomiting.
Morning sickness. Depraved
appetite. Constipation. Tympanitis.
Sometimes Diarrhoea, Hepatic
Colic. Kidneys also, may
find Albuminuria of preg.:
Polyuria, Glucosuria etc.

4. Changes in Skin.
Actual Rosacea due to disordered
menstruation.
Discolourations of skin in
patches on body & face -
General Constitutional Derangements.
Catetic Changes etc.

very diff diseases of the Uterus may
give rise to same symptoms
~~the~~ Many a Uterine disease may
give rise to ~~so~~ very different
symptoms in two cases.

II.—PHYSICAL SIGNS.

1st. AUSCULTATION AND PERCUSSION.

2nd. INSPECTION.

1. Sight unaided.

2. „ aided.

(1.) By Specula—vaginal, cervical, rectal, vesical ;

(2.) By microscopic and chemical examination ;

(3.) By mensuration.

3rd. TOUCH.

1. Unaided.

(1.) Abdominal palpation.

(2.) Vaginal examination.

(3.) Rectal „

(4.) Vesical „

(5.) Combined or bi-manual examination.

2. Aided.

(1.) By Volsellæ.

(2.) „ Tents and other Dilators.

(3.) „ Sound.

(4.) „ Curette.

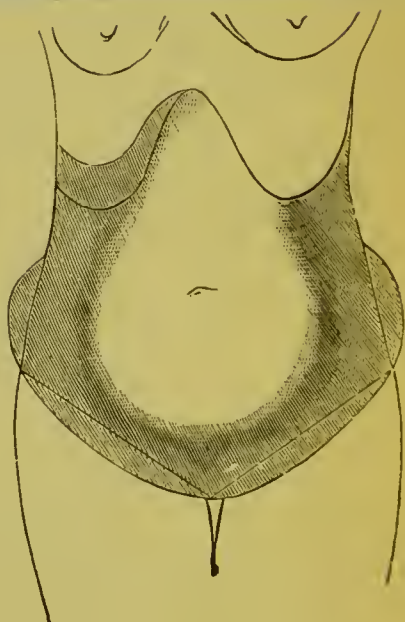
(5.) „ Aspiratory or Exploring Needle.

ANÆSTHETICS.

2



*fluid in
parovarian cyst*



*fluid in
peritoneal cavity*

II Physical Signs

Touch sight hearing
smell is uncertain.

Hearing. Auscultation + Percussion
Auscultation practiced with
Patient placed on her back
& abdomen laid quite bare -
In woman 8 months you hear
a uterine hum,
In large fibroid tumours we
may hear same -
In Preg we hear foetal heart.
Percussion useful to determine
parovarian cyst - or fluid
lying free in peritoneal cavity.
Also to recognise the size of tumours!

2. Inspection

(A). Sight Unaided

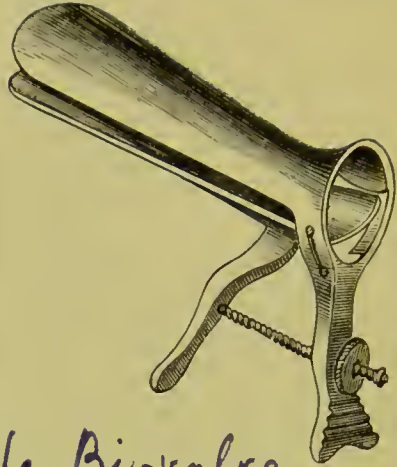
Abdomen, Mammæ, Umbilicus becoming darkened - Abdomen flattening out - Striae produced. Superficial veins developed in long standing tumours. External Pudenda - Notice discharges escaping from genital canal.

(B) Aided -

(1) Specula.

Tubular Speculum - Metal or wood or Vulcanite or celuloid. You require the speculum of three sizes - In using it you displace the Uterus etc. Can also be used to apply irritants to the Uterus without the irritant coming in contact with the Vagina.

Place patient on left side with ~~se~~ knees drawn up. Take speculum in left hand - Warm + grease instrument - Pass forefinger



The Bi-valve.
speculum.



The Syme or
Duckbill
speculum.

of R hand + ~~for~~ guide the speculum in - This lets you see the cervix very well -

The Valvular Speculum

The Bivalve is much better for seeing the vaginal roof - The two blades are Ant + Post - Very serviceable -

The Spatular Speculum

Copper or nickel spatulae - Dr Marion Syme puts women on their knees + elbows + ~~in~~ in using his speculum gets a view of their Ant Vag wall

(Gutter Speculum
Modification of above -)

The Syme position is in having the right thigh drawn up.

Precautions in Using Speculum

1. Not as a rule in Virgins -
2. Not during menstrual period
(except sometimes in haemorrhage)
3. Not in Cancerous infiltrations.
4. Not in Pelvic Inflammations

Tubes may be carried into the cervical ~~end~~ canal (cervical Speculas) but not much good -

Rectal specula -

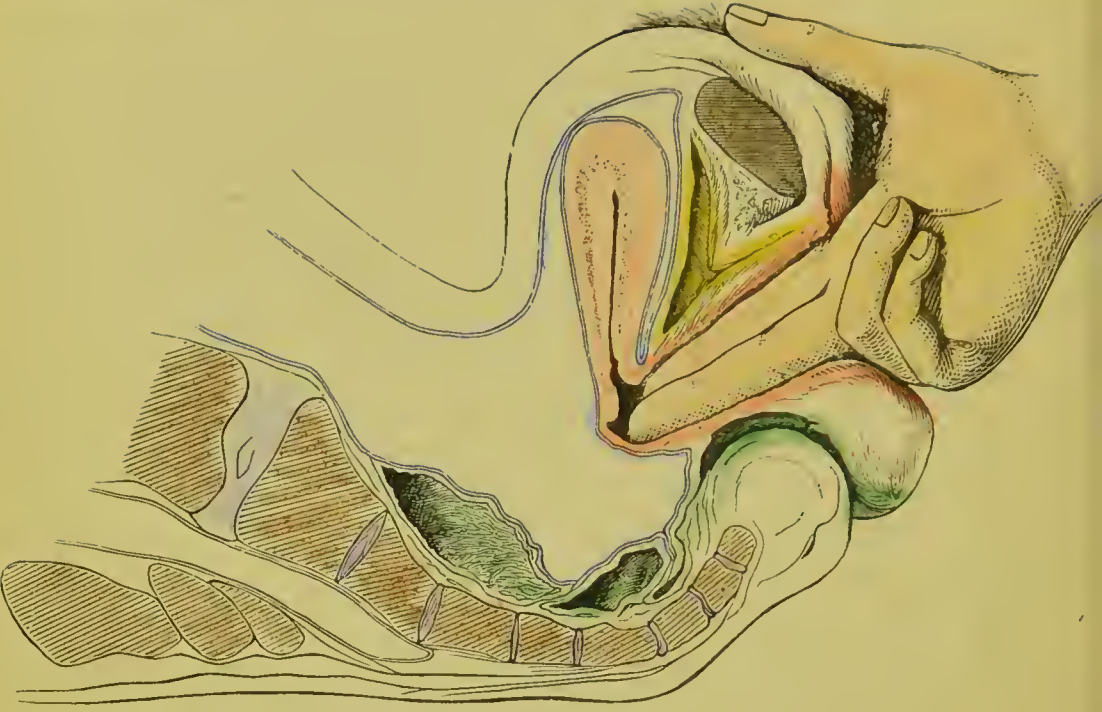
narrow end of Syms spec:
will do nicely -

Vesical speculum

Same as tubular only
smaller -

2) Microscope

Examine membranes thrown
off. Also discharges - also
sometimes ~~sc~~ ~~or~~ scrapings
from Uterus + clippings
from cervix -
Also chemical examination



(3) By Mensuration
Pelvimetre, tape etc.

III Touch

Unaided -

Hands

1. abdominal Palpation.

Place patient on her back
with knees elevated. Apply
hands directly to skin.

The hands should be carefully
warmed - & carefully disinfected.

Determine, if swelling is discerned,
whether it be abdominal or Pelvic.
If Pelvic the swelling must be
located. outline, form, consistence,
fixity, situation, sensitiveness
must all be considered -

Vaginal Exploration

Patient on back. Right
thigh raised - Fingers ^(index + middle) must
be greased with antiseptic
oil in addition to washing
& warming.

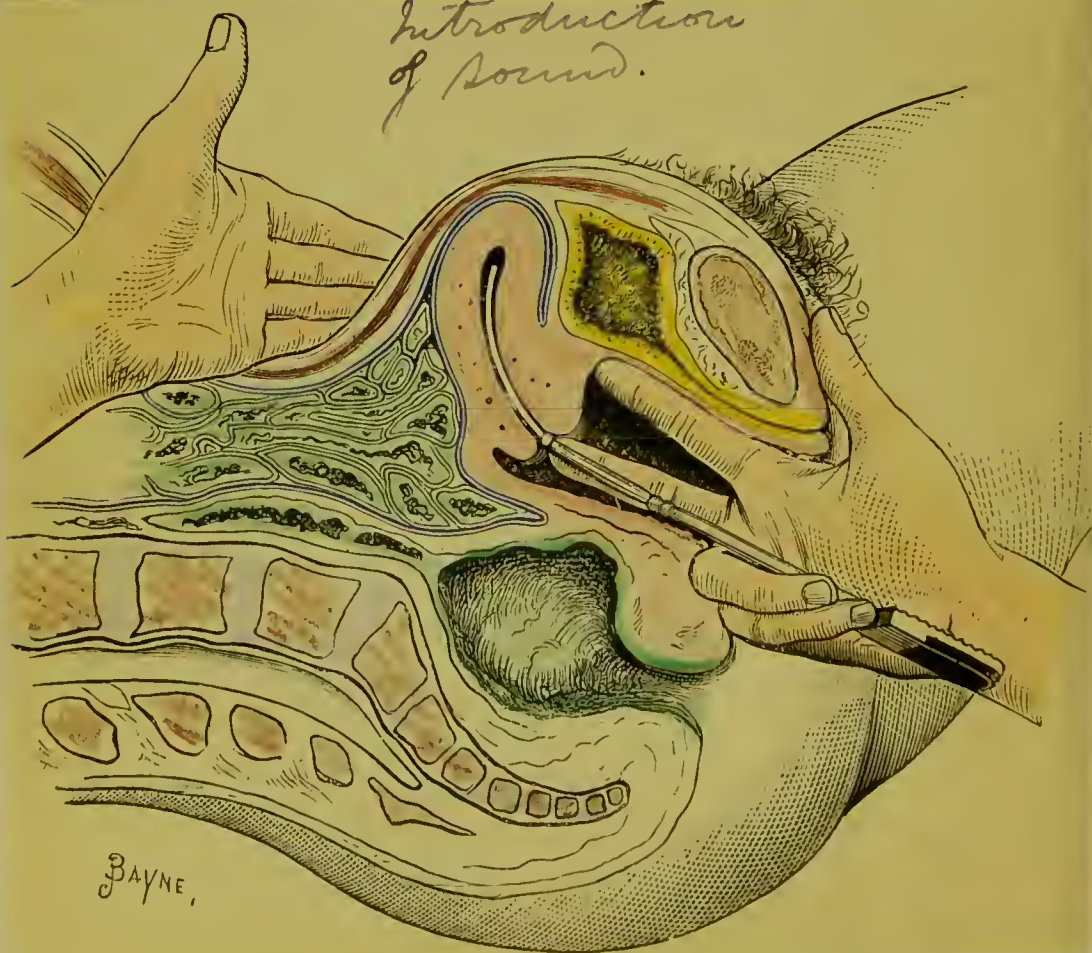
level of Ischial -
spines ..

Index + Medius of right hand is generally used. First try with one finger. In introducing fingers first apply finger to Anus & then slip over perinaeum - Note whether entrance is patulous or not, swellings of labia - Sensitiveness, hymen, cavity whether empty or occupied, contractions, fistulae, moisture or dryness, elevation of temp°, swellings or sensitive parts. Then feel vaginal portion of Cervix Uterae - find os - note direction ought to look downwards + Backwards - Notice size of os - Consistence of lips of os - Feel if it be enlarged, elongated or thickened - Then try + feel body of Uterus at back wall of Bladder - If there be imperforate hymen or atresiae vaginae or vaginae too narrow the explorative

Exam: of fundus.



Introduction
of sound.



may then be made through the anus.

In Rectal Examination the Cervix uteræ feels thicker. Sometimes the exploration is made through urethra + bladder - The urethra must be dilated first + then finger placed in -

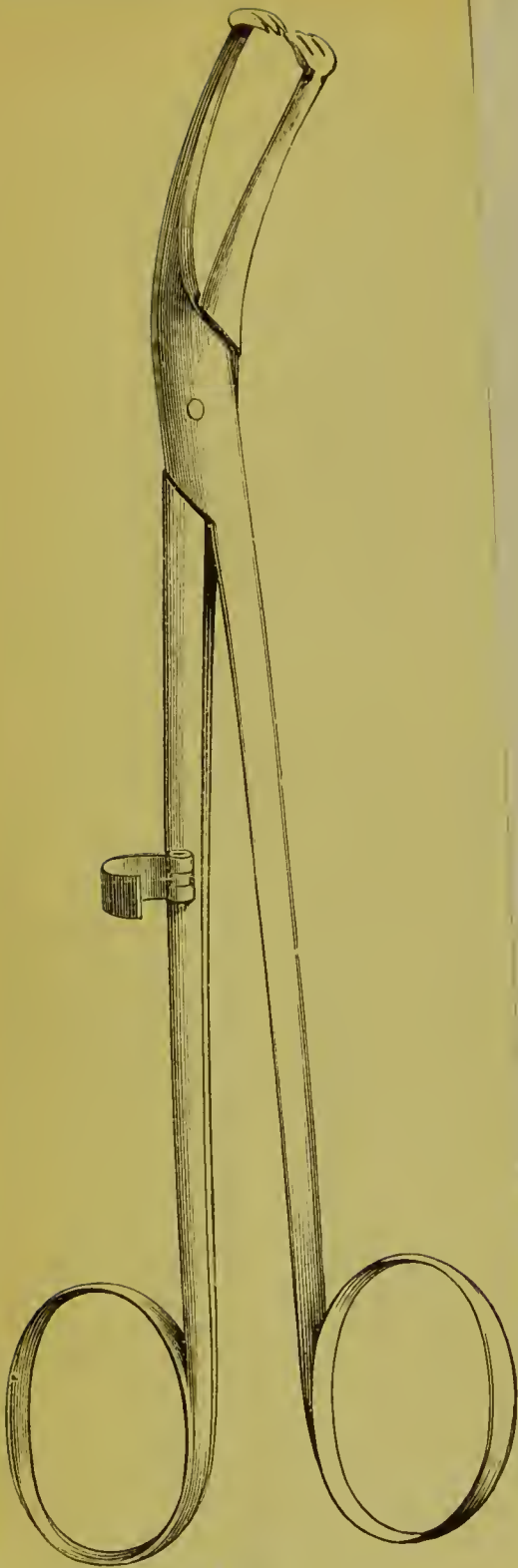
Never make p r without also making abdominal palpation.

Bimanual examination is the most important of all means of examinations.

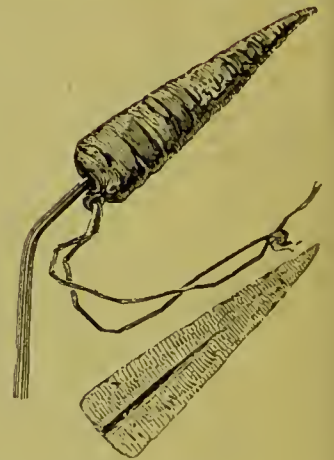
Place patient on back ~~to~~ right hand p r left on Abdomen - Make out the outline, size, + mobility of the Uterus, Fallopian tubes + Ovaries.

The above may be changed for Vaginal Rectal examination - or Recto abdominal - or Vesicle abdominal examination -

method of using
Yolsellum



Yolsellum



Sponge Tent

Volsellum

used to lay hold of Ant lip of Uterus. Pull Uterus down in pelvic cavity & then finger etc can get easily to it.

Also used in order to pass the finger into the cavity of the Uterus.

The cervical canal being opened up by a tent or other dilators.

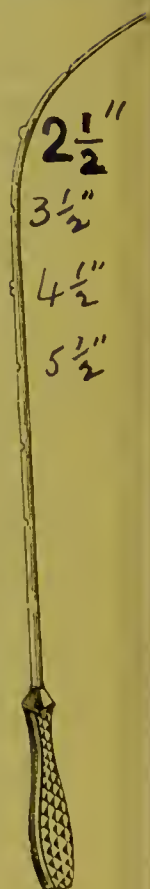
Tents

Sponge tent made by Sir James Simpson
Sponge soaked in antiseptics
& wound round with whip cord.
& dried. ~~It~~ in the cervical canal
it swells up & so expands the
canal.

Tupelo Tent made of tupelo
wood & swells up very much.

tents can be introduced by fingers
alone, or with Syms speculum,

Be carefull to pass the tent
right up the cervical canal
& passing through the Os internum.



Uterine
Sound.

When tent is fixed inject some antiseptic liquid to the vaginal cavity + so make the Tent swell up -

Drawbacks - Don't use if: -
\$ Inflammation present

You can now get your finger into the uterus. ~~The~~ dilatation begun by tent may be continued by finger alone
Dilators

Rapid dilators three blades

& Graduated Bougies (Hagar's)

made of Vulcanite.

Lawson's Tait's Dilators

screw on to a stem - elastic band on stem + round abdomen. So is gradually pressed in -

Rounds 1843. Sir James Simpson.

Metal rod - Silver - German silver. Better Copper (silver or nickel plated) Length should be long enough to allow it to pass 6 or 8 inches ^{into} uterus. ~~to~~ Mark $2\frac{1}{2}$ inches from point. corresponding with ~~internal~~ cavity

DISEASE.

ANAMNESIS.

1. NAME ; AGE ; OCCUPATION ; RESIDENCE : MARRIED, SINGLE, OR WIDOW ; DATE OF ADMISSION.
2. COMPLAINT AND DURATION OF ILLNESS.
3. GENERAL HISTORY OF—(a) Present Attack ; (b) Previous Health ; (c) Diathesis ; (d) Social Condition and Habits ; (e) Family Health.
4. SEXUAL HISTORY.
 - (1) *Menstruation*—
 - A. Normal—(a) Date of Commencement ; (b) Type ; (c) Habit—
Duration,
Quantity ;
(d) Date of Disappearance.
 - B. Morbid—(a) Amenorrhœa ; (b) Menorrhagia ; (c) Dysmenorrhœa.
 - (2) *Intermenstrual Discharge*—(a) Character ; (b) Quantity.
 - (3) *Pregnancies*—(a) Number ; (b) Dates of First and Last ; (c) Abortions ; (d) Character of Labours ; (e) Puerperia ; (f) Lactations.
5. LOCAL FUNCTIONAL DISTURBANCES—(a) Bladder ; (b) Rectum ; (c) Pelvic Nerves and Muscles.
6. GENERAL FUNCTIONAL DERANGEMENTS—(a) Nervous System ; (b) Respiratory System ; (c) Circulatory System ; (d) Digestive System ; (e) Emunctories.

PHYSICAL EXAMINATION.

1. GENERAL APPEARANCE AND CONFIGURATION.
2. MAMMAE.
3. ABDOMEN—(a) Inspection ; (b) Palpation ; (c) Percussion ; (d) Auscultation ; (e) Mensuration.
4. EXTERNAL PUDENDA.
5. PER VAGINAM—(a) Orifice ; (b) Walls and Cervix ; (c) Roof ; (d) Os and Cervix Uteri.
6. BI - MANUAL EXAMINATION (Abdomino - Vaginal, Recto - Vaginal, Abdomino - Rectal, Abdomino - Recto-Vaginal, Abdomino-Vesico-Vaginal)—
 - (1) *Uterus*—(a) Size ; (b) Shape ; (c) Contractility ; (d) Sensitiveness ; (e) Position ; (f) Mobility ; (g) Relations.
 - (2) *Fallopian Tubes*.
 - (3) *Ovaries*—(a) Size ; (b) Situation ; (c) Sensitiveness.
 - (4) *Peritoneum and Cellular Tissue*.
 - (5) *Bladder*. (6) *Rectum*. (7) *Pelvic Bones*.
7. USE OF—(a) Speculum ; (b) Volsella ; (c) Sigmoidoscope ; (d) Curette ; (e) Aspiratory Needle ; (f) Tent.
8. PHYSICAL CHANGES IN—(a) Nervous, (b) Respiratory, (c) Circulatory, (d) Digestive, (e) Excretory Organs ; (f) Skin ; (g) Bones.

DIAGNOSIS.

PROGNOSIS.

TREATMENT.

PROGRESS AND TERMINATION.

Fundus External
of Uterus from ~~above~~ to internal
os.

Sound ~~gives~~ lets you know if
the Uterus be empty or not -
tells the size of the cavity
of the Uterus -

Tells of the patency or narrowness
of os & cervical canal.

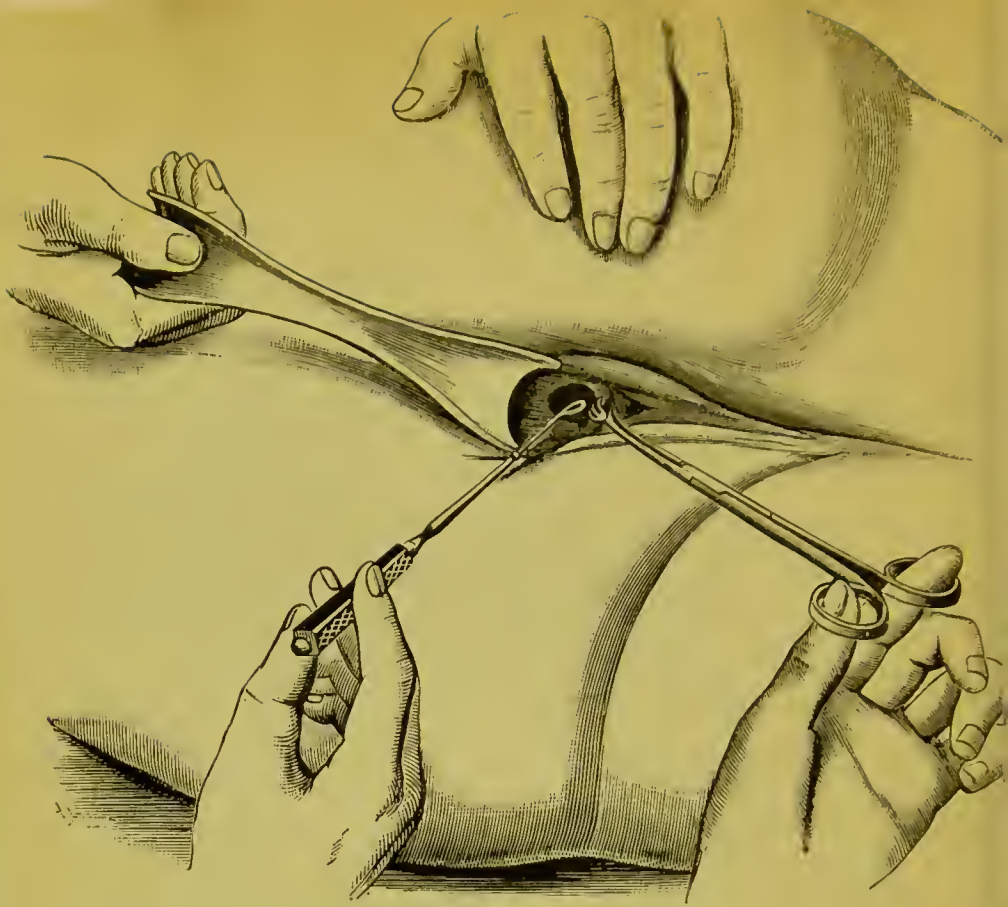
Sound tells position of Uterus -
also condition of Walls of
Uterus -

also judge thickness of Uterine
Wall (with one hand on abdomen).

Take sound in left hand.
Right hand p.v. - Introduce
sound into cervical canal -
The great difficulty is to
pass the internal os -

Contra-indications

1. Menses
2. Inflammation
3. Amenorrhoea (be careful that
it is not pregnancy).



Curetting



$2\frac{1}{2}''$



*Fenestrated
Curette*



*Trocar and
cannula*

Sound is especially useful to teach the young practitioner - also in difficult diagnosis.

Sometimes a bougie of catheter may be used (gum elastic).

Curette

Used for ~~the~~ scraping out the endometrium. Generally exposed cervix with Syms speculum & catch hold with volsellum - The curette may be fenestrated or non fenestrated - Used to obtain scrapings of New growths etc - Also to measure the uterus -

Aspiratory trochar Sir James Simpson
Aspirate Pelvic swellings if in doubt whether solid or cystic.

Chloroform relaxing the Abdominal muscles - reduces sensitiveness etc & helps largely in diagnosing - especially in tumours.

SYMPTOMS AND DIAGNOSIS OF PREGNANCY.

CLASSIFICATION OF SYMPTOMS.

I.—RATIONAL SYMPTOMS. (*or Indirect*)

1. Minor constitutional and sympathetic changes in Countenance ; Head ; Circulatory, Alimentary and Emunctory Organs ; Skin.
Morning Sickness

2. Amenorrhœa.

(Exceptional conditions)

3. Quickening.

Thy

*or
acid
rou*

Signs + Symptoms

1. Rational Symptoms

1. Expression of Patient becomes pinched. Mouth drawn. Heavy lips. - Swelling of Neck. Headache. - Dreams.

Circulatory - Heart + Vessels become distended + enlarged - blood becomes altered.

Alimentary. Digestive apparatus. - Liability to sickness in Morning.

- Nausea when she first gets up. - Seen in first three months.

Constipation becomes common.

More frequent evacuation of Bladder.

Renal secretion. - On standing deposit falls in Urine called *Kyest*.

Skin - discolorations - sometimes brown patches in face + cheeks.

Amenorrhoea.

In exceptional conditions the menstrual flow has occurred 2 or 3 times after pregnancy has ~~occurred~~ set in. - Cases have been recorded ~~the~~ in

which menses go on all 9 months.
This may be a real menstrual
discharge but sometimes it is
some pathological condition.
The Amenorrhoea is not always
Physiological but may be
due to fibroids etc.
Sometimes conception occurs where
the menses have not been
present.
Often menstruations are very
irregular & so become uncertain
about the date of ~~con~~ conception.
Towards the Menopause
amenorrhoea may have set
in & then ~~the~~ Conception take
place. Women sometimes
conceive during lactation.
before the menstrual flow
has returned.

Quickening

Uncertain but valuable in multiparae.
Date at which mother first becomes
conscious of the foetal movements.
This takes place usually

when the Uterus has risen up
into the Abdominal cavity -
Date - midterm of pregnancy -
Sensation = simple quiver.

Changes in Mammæ

Sometimes at 1st month but
usually 2nd month a steady
growth of mammæ takes place.
Nipple becomes more prominent.
Areola becomes darker &
widens. Papillæ on its ~~own~~
surface become enlarged.

After 5th fainter discoloration
is seen outside areola with
white spots on it. Meanwhile
6- & 7- month veins shine
through the skin. Skin
becomes stretched & striated
at the base of breast -
Palpation of Mammæ shows
the extra development of the
gland proper - & a knotty
feeling at the base of
gland. Milk can also
be squeezed out - (Colostrum)

Table of the Signs & Symptoms of Pregnancy

Symptoms	Term of Pregnancy							
	1	2	3	4	5	6	7	8
Morning Sickness	+	+	+	?	●	●	●	●
Suppression of the Menstrues	+	+	+	+	+	+	+	+
Mammary Areola		?	+	+	+	+	+	+
Enlargement of the Abdomen			?	+	+	+	+	+
Foetal Movements				?	+	+	+	+
Shortening of Cervix								
Ballotement				+	+	+	+	?
Uterine Souffle			?	+	+	+	+	+
Foetal Heart				?	+	+	+	+
Darkening of Vagina			?	+	+	+	+	+

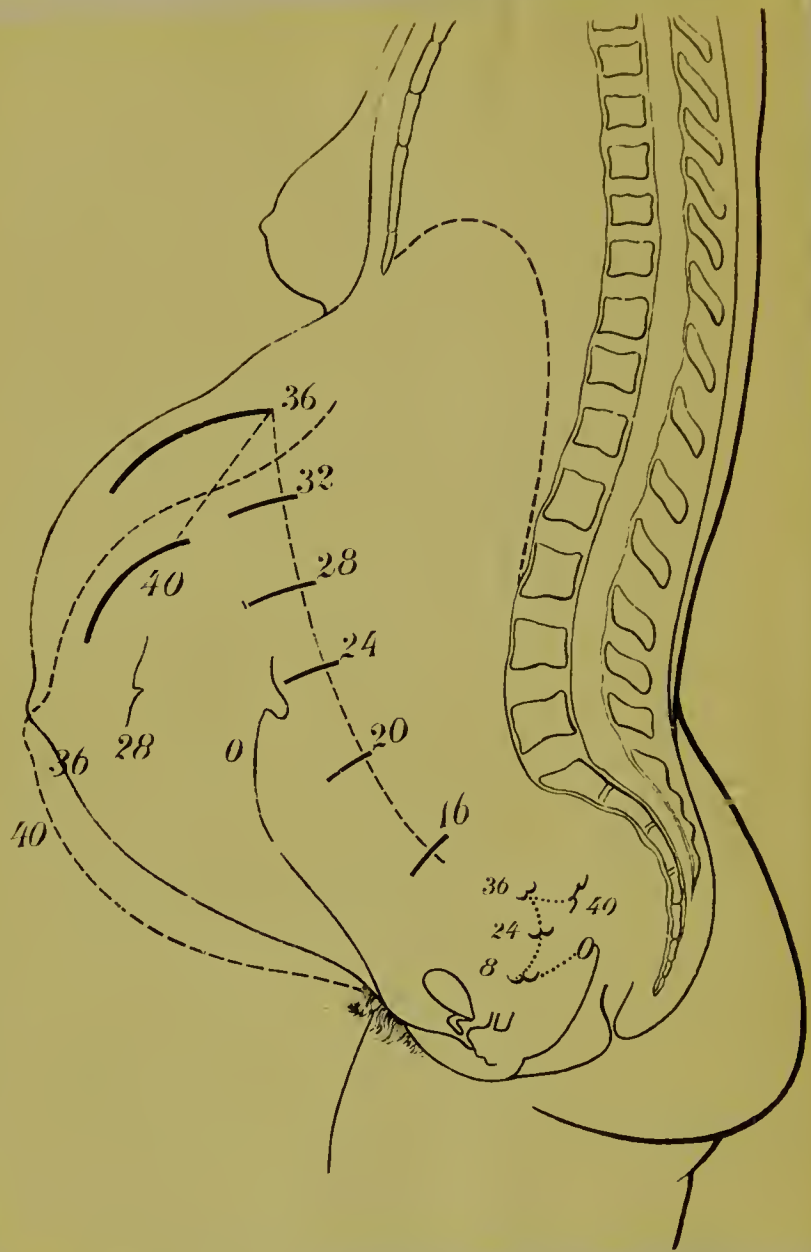
purplish

These changes are of high value in Primiparae.

A woman may be pregnant & the mammae remain small

Abdomen

Inspection. Umbellicus generally becomes discolored & darkened. A dark line runs down towards the Pubis & sometimes towards the xiphoid sternum. This is not a sure sign - The Umbellicus as preg advanced, in 6th month becomes flattened out - 7th month bottom of scar is on level of surrounding skin - After that projects beyond it - ~~Striae~~ Striae are seen in the skin in the inguinal regions - sometimes spread further. These Striae are seen to be vascular - & look like scar of recent wound - After preg the scars remain as white streaks (Linea albaeantes) -



The Abdomen enlarges - but is said to become flattened first, when the Uterus is still in the Pelvis - When it rises out of the Pelvis the abdomen swells -

1-3 months it is Pelvic Organ
3 - rises above Pelvis
6 - to Umbellous
9 - to criform Cartilage -
+ then sinks down a bit -

Vagina

Labia begin to grow + enlarge -
Prima becomes patulous - Internal surface ~~becomes~~ of labia becomes more vascular - + the m m becomes somewhat dusky or violet hued - This is seen in 6th week - This color + vascularity affects the entire vaginal m m.
Vaginal cavity becomes more moist. The arteries are enlarging in the Vaginal wall + pulsation can be felt.



Uterus

Touch cervix. The cervix in nulliparae have firm + resistant lips (like tip of nose with finger). But when preg sets in the cervix softens - (more like lips of mouth) & orifice becomes more patulous - Anterior fornix first elongates then shortens - from the mid term onwards - Cervix ~~is~~ is filled with plug of mucus ~~seen~~ seen with speculum -

~~The~~ Uterus proper - becomes enlarged walls separated + it becomes a rounded body instead of a flattened body - This is very important in diagnosis. After 6 month Uterus becomes more ovoid narrower below - A change in the texture of the uterus take place - The non-gravid uterus ~~feels~~ feels firm, hard, resistant structure between the hands. But gravid uterus feel soft as to its walls x

✕. or
lower seg.
rather

As Uterus grows fundus deviates
to right side. The uterus
pushes the Abdominal Viscera
upwards + backwards.

at 6th month palpates as soft
& flaccid tumour - but there are
rhythmic contraction of the uterus
causing it to feel firm etc. The
wave passes off & the uterus
again feels soft & almost
fluctuating.

The softening in uterine walls is
most distinctly marked in
lower segment & is most
easily felt at back wall -
It is felt even at 2 & 3
month. If you grasp cervix*
between two fingers there is
a certain compressibility in the
gravid uterus -

As it grows its ant surface
keeps next the abdominal wall -
As the walls grow in thickness
the blood vessels in uterine walls
develop marvelously, a hum
or bruit is then heard by
the stethoscope. Heard along
the borders of the uterus -
Mostly on left side as the
uterus changes its position.

Foetal Heart

below umbilicus = Vertex.

Above umbilicus = Breech.

The sound is synchronous with Maternal Pulse ~~is~~ - + sounds like aneurismal sac.

Foetal Movements

Active or Passive -
Active. Sometimes seen on inspection - or you may feel the movements - or you may even hear the movements -

Ballottement will prove presence of foetus + also give some indication of its position -

Ballottement p r may determine pregnancy between 3 + 4 months -

The sound of the foetal can even be heard at 4th month. It is like muffled tick of watch. + about twice as quick as Maternal Pulse. about 180 per minute. Feel maternal Pulse when trying to hear foetal heart sound.

The position of the foetus may be discovered by listening to the heart. The back of the foetus comes towards the Abdominal wall -

Diff Diag of Preg fr:—

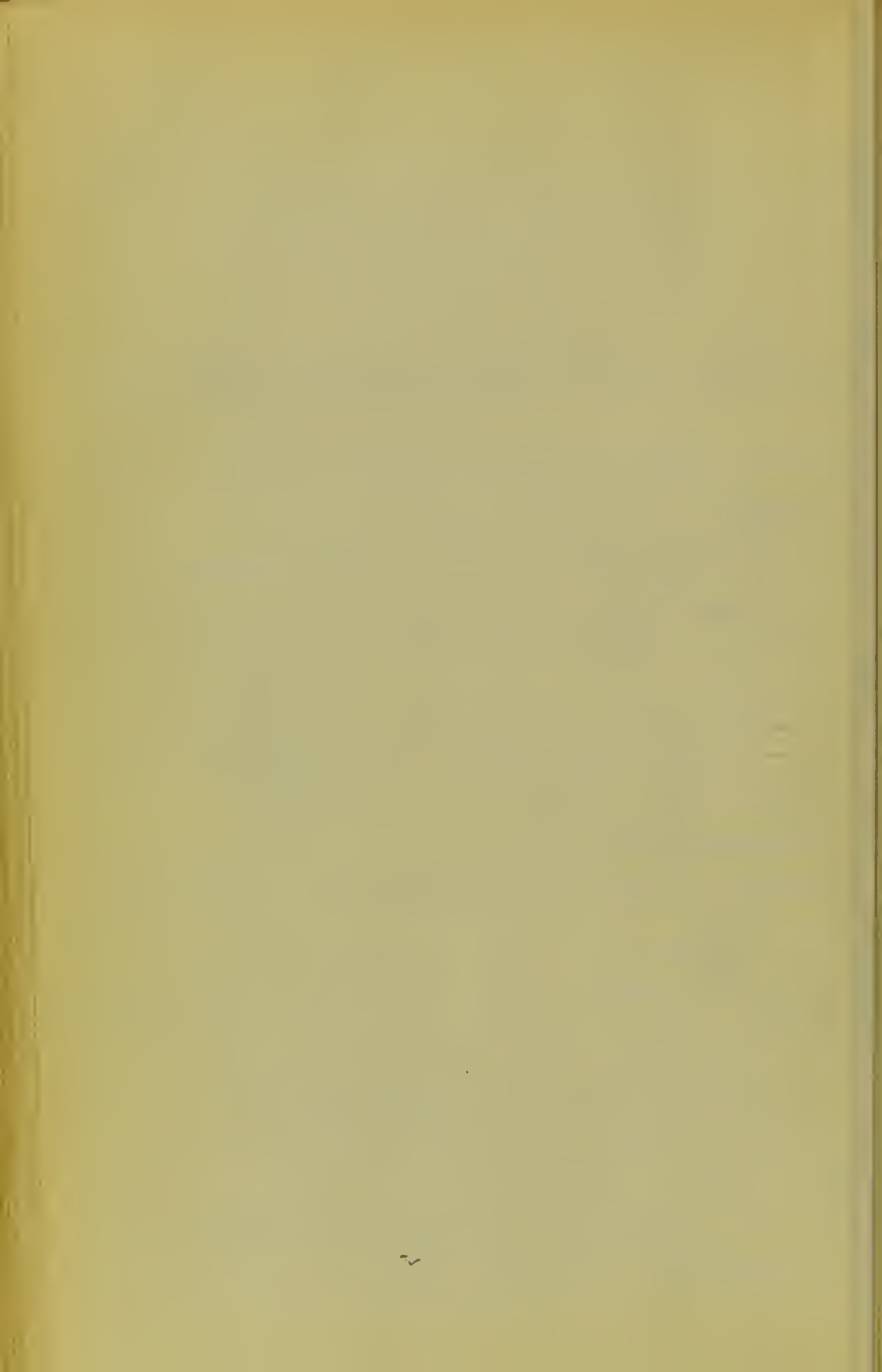
1. Hypertrophied Uterus 1. Subinvolution
2. Inflammatory
2. Blood, Air, Water in Uterus
3. Ascites
4. Tumours, Uterine, Ovarian,
Other, + Phantom

Other sounds, such as movements, funic souffle, may be heard -

Condition to be Confounded with Preg

Uterus enlarged by

1. ~~Super~~ Subinvolution
2. Inflammatory Congestive processes -
Between the hands this hypertrophied uterus feels solid + firm -
3. Blood in cavity of uterus
Haematometra - or fluid
Hydro~~metra~~metra - or air
Pneumo~~metra~~metra -
4. Ascitic accumulations in abdominal cavity -
5. Neoplasms of Uterus. Especially fibroids.
6. Neoplasms of Abdomen.
7. Parovarian Tumours
8. Ovarian Tumours
9. Liver Spleen + Kidney Tumours
10. Phantom Tumours.



Diff between Multi- + Primiparae

Striae at base of breast last after old pregnancy but lose their colour -

Ditto as regards striae on abdomen -

Abdomen of primiparae is firm + smooth -

In ~~prim~~ Multiparae the skin is darker + laxer + old striae seen -

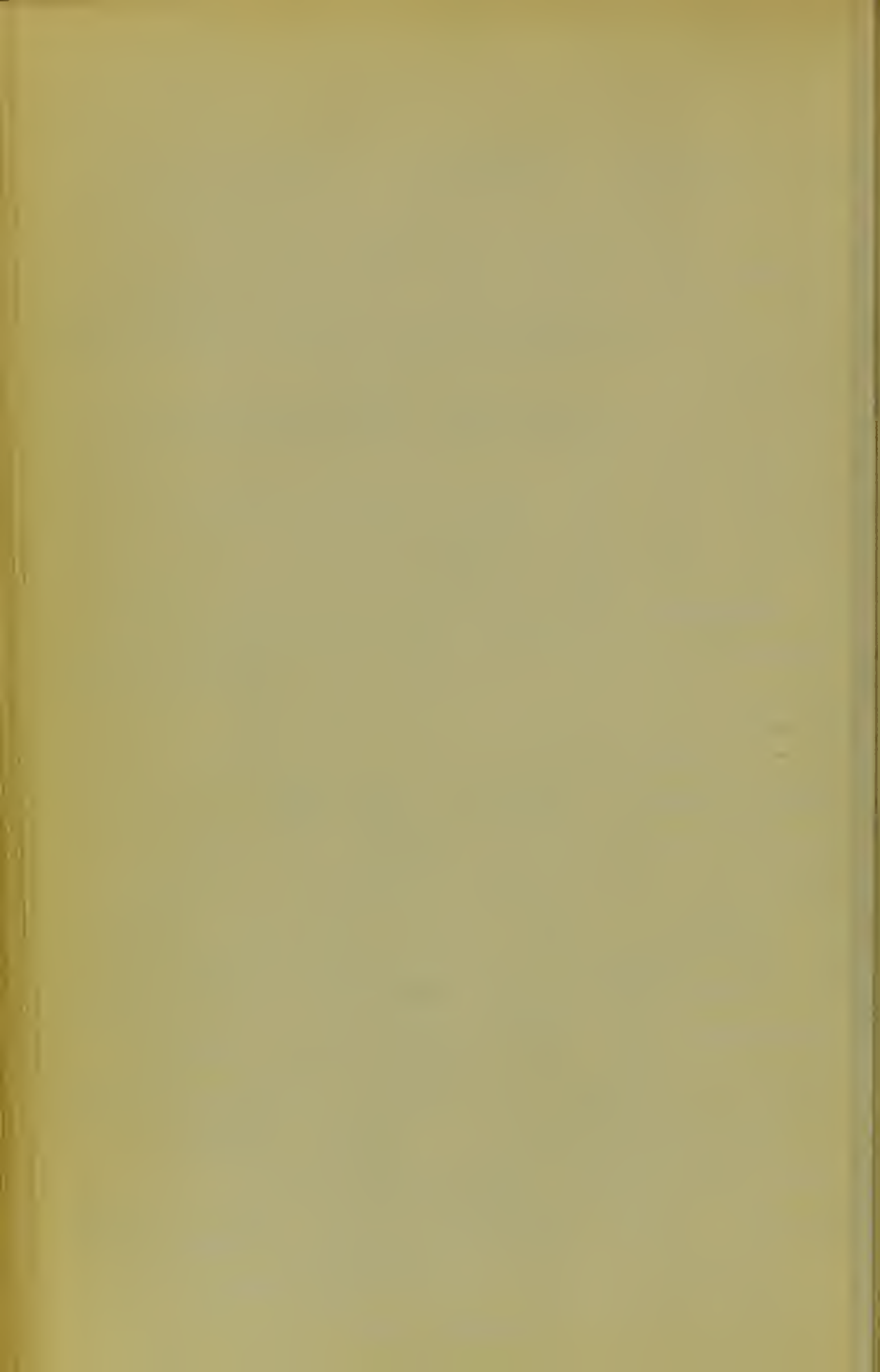
On Palpation -

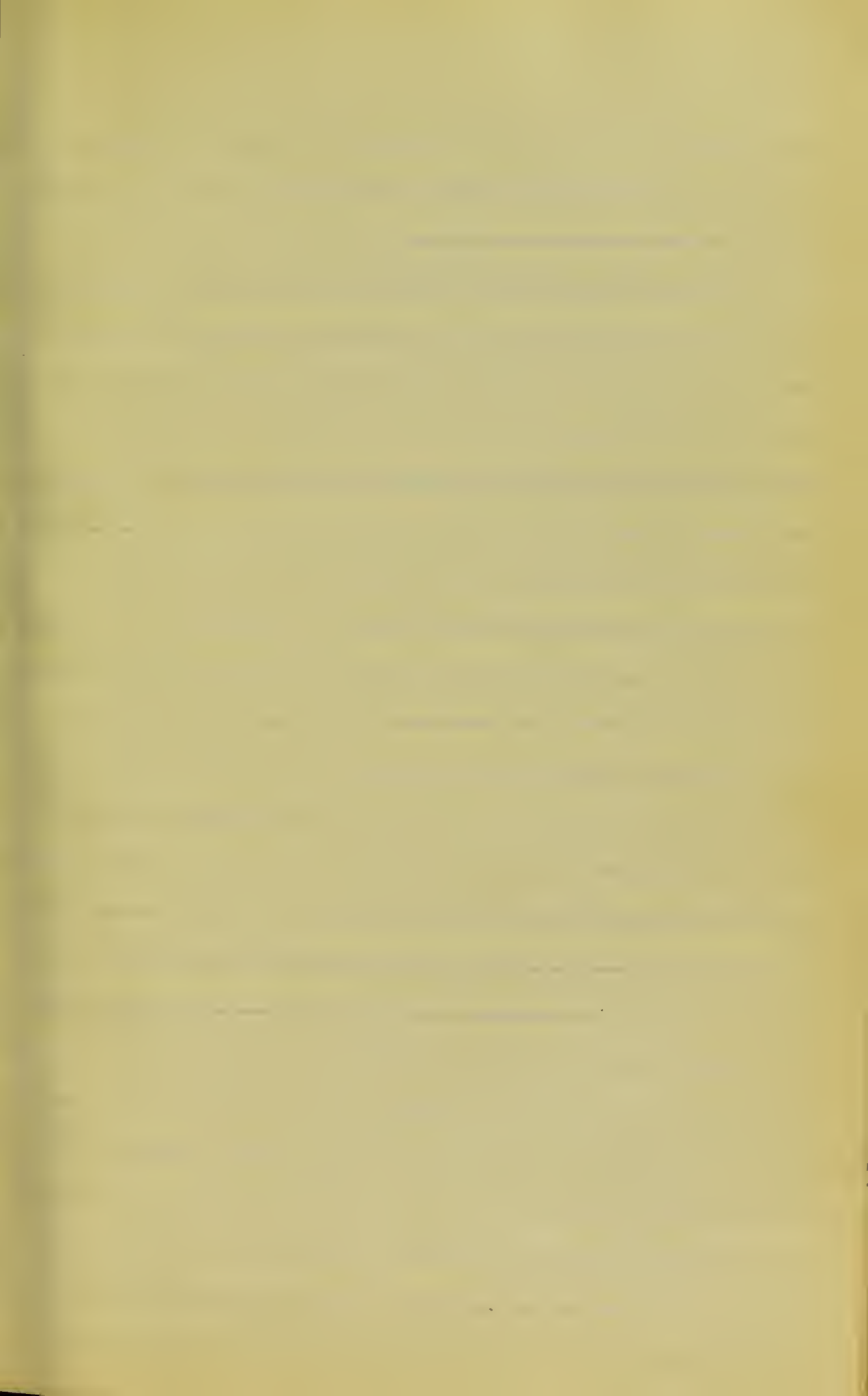
Abdominal walls Multi are more relaxed than in Prim:

Uterine walls of Prim retain a certain tone of muscle that the multiparae ~~to~~ does not retain.

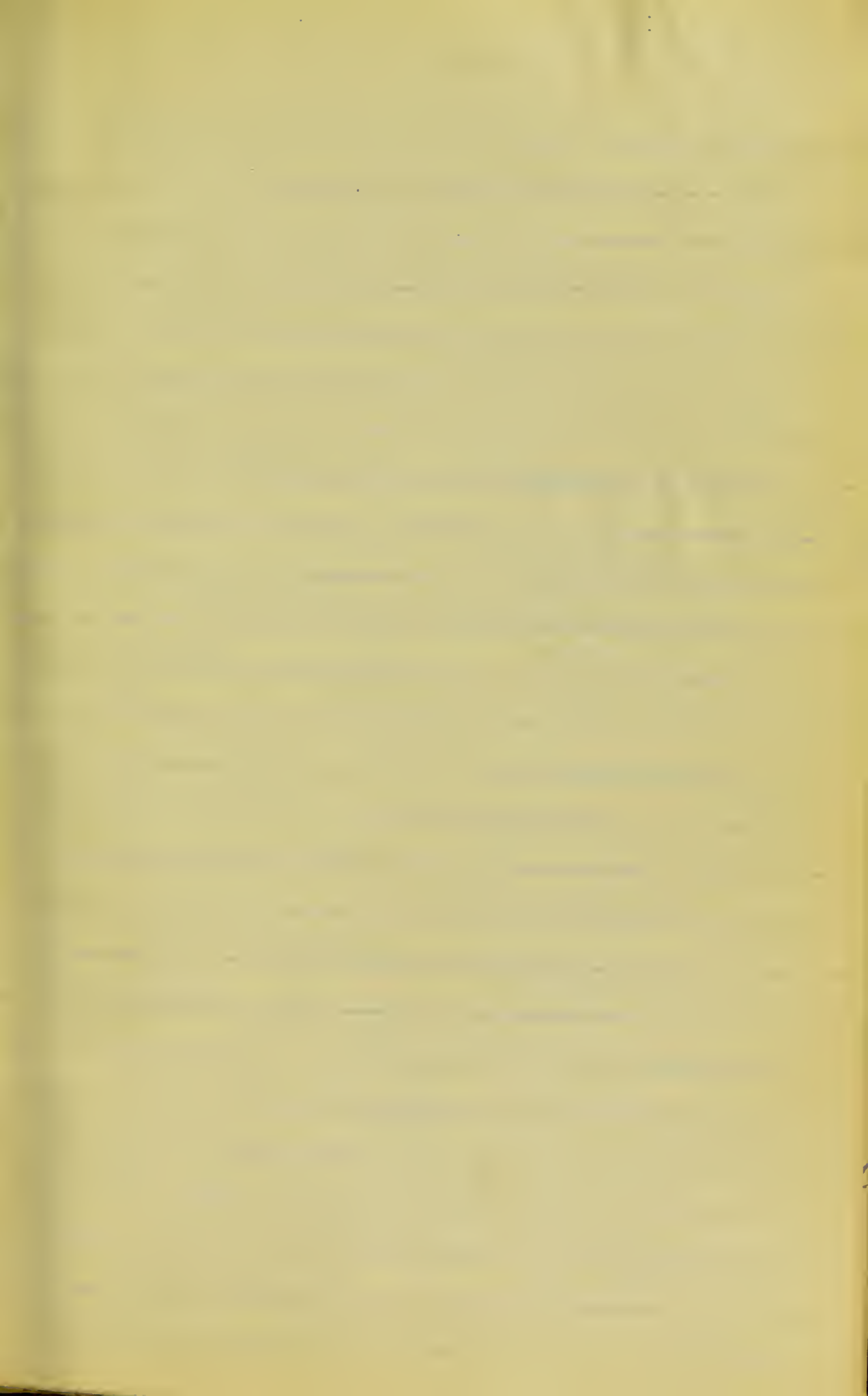
Perineum of Multipara shows hymen burst + torn (Corunculae myrtiformis). Also often lacerated perinaeum -

Cervix in multiparous is smooth + firm - in multiparous is fissured + ~~is~~ so more or less patulous -









FEMALE ORGANS OF GENERATION

I. THE OVARIES.

Form, *ellipsoid*.
Size, $1\frac{1}{2} \times \frac{3}{4} \times \frac{3}{8}$.
Situation, O. B. U.
Appearance,
Structure.

Development and Structure of the Follicles,

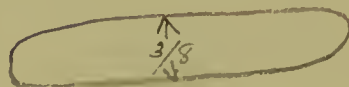
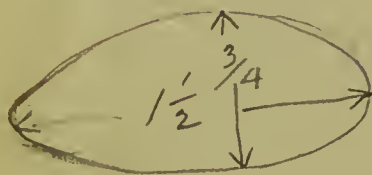
Vesicles,

Number of Ova in human Ovary,

Changes at Menstrual Period,

Corpus luteum.

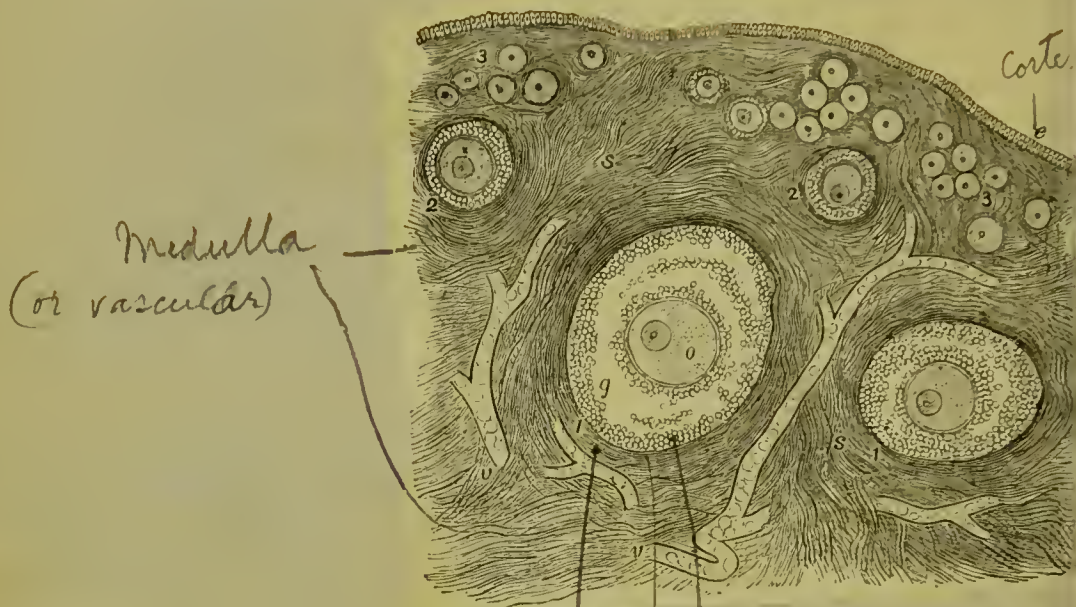
Parovarian



ovary

Female Organs of Generation

Ovaries the central or dominating organs in the female economy - Lie on post aspect of broad lig. Almond shaped in form. Broad end turned outwards - Point towards Uterus. Two borders one free & one attached to broad lig - Free ~~to~~ border is convex & is posterior & slightly upper - Attached border is straight & is directed forwards. Two surfaces superior & inferior - The superior being flatter & the inferior rounded - Each ovary about $1\frac{1}{2}$ " in length, $\frac{3}{4}$ " in width. $\frac{3}{8}$ " in thickness. Weight 87 grains on an average - In early development the ovaries run parallel with the Vert. column. They lie outwards backwards - upwards - in region of sacro-iliac joint - & below



Tunica Fibrosa
 Membrana Papiia
 Membrana Granulosa

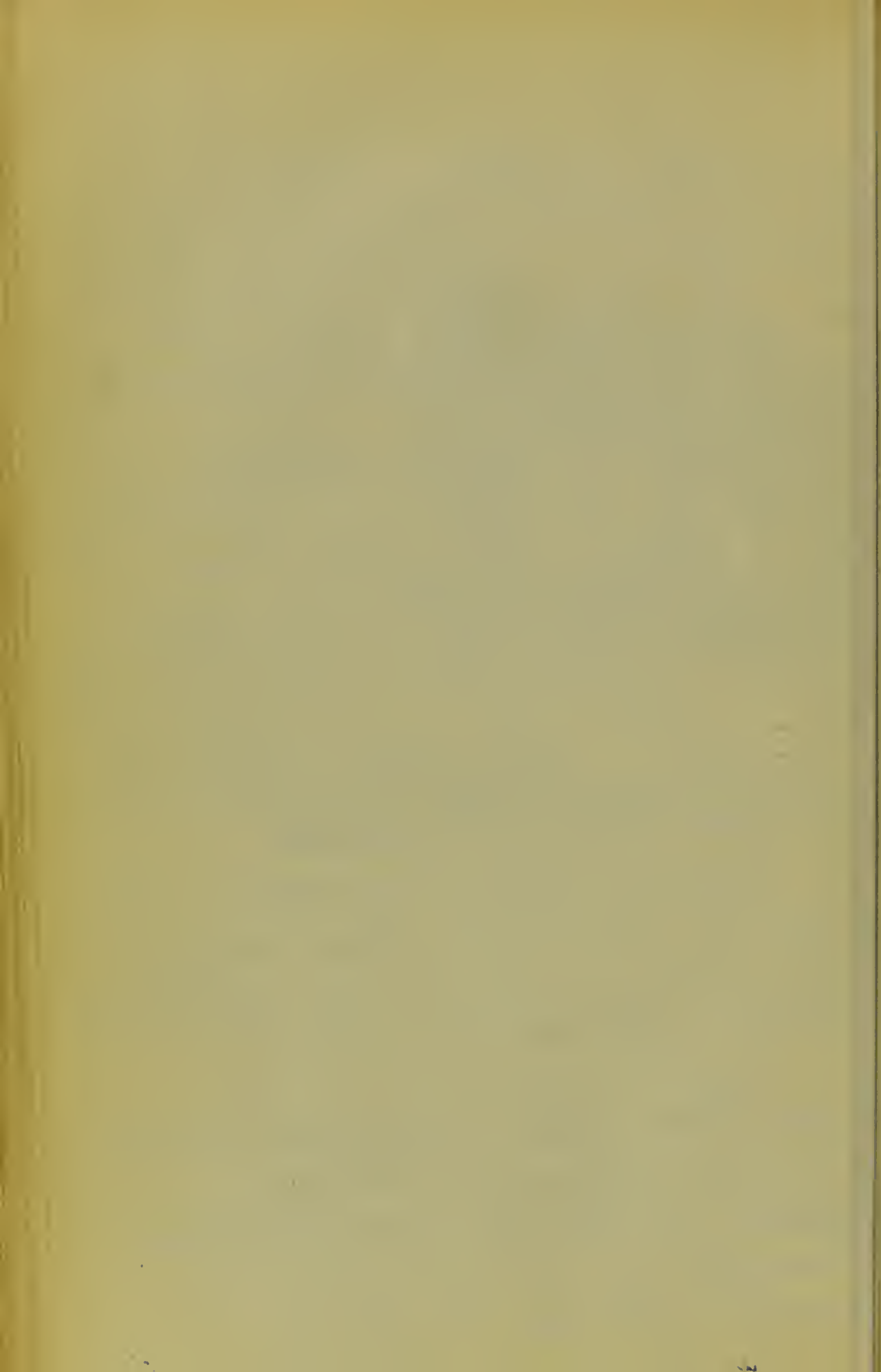
fimbriated fallopian tubes -
~~They are fixed by the inner pointed~~
~~extremity by a distinct rounded~~
~~lig i.e. the ovarian lig. The~~
~~part of the broad lig that runs~~
~~between the.~~

On section the ovary shows
cortex + medulla or vascular
zone. Muscular fibres run
through this medullary layer -
cortical layer or parenchymatous
zone - This layer is divided into
three parts. see other notes on
the histology of the ovary.

The cortical layer contains the
Graffian follicles. This cortical
layer has a layer of epithelial
cells outside.

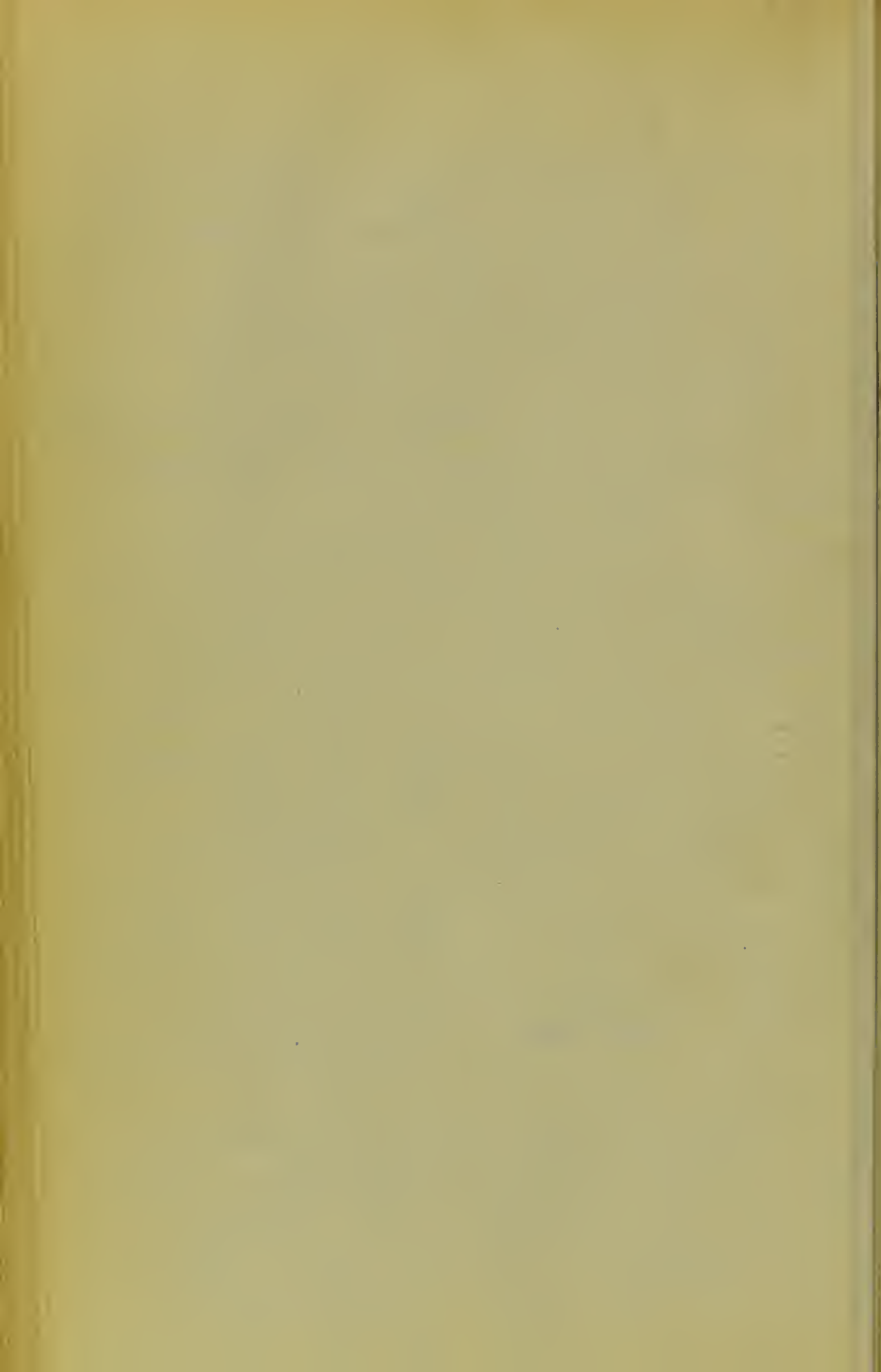
Uterus has three distinct walls -
external Tunica Fibrosa
~~Middle~~ in this we find the blood
vessels

Middle tunica Propria
contains more cell element.



Internal Membrana Granulosa -
Cavity contains fluid or (paralbumin)
Cluster of cells on one side
called Discus or Tumulus
Proliferous - In this is the Ovum.
The Ovum is a large well developed
cell, that was once an epithelium
cell on the surface of the
ovary - Wall called Vitelline
membrane or Zona Pellucida -
Radiating lines have been seen
in this Zona Pellucida - The
yolk mass is inside the Z. Pell.
In this mass is the nucleus or
germinal vesicle - Within this
there is a nucleolus called the
germinal spot - The ova in their
ovisacs in the ovary - Number
in ovary ~~400,000~~^{36,000} in child of 2-3 yrs
in age.

From time to time one of the ovisacs
begins to develop faster than itself
fellows + reaches the surface -
At the "stigma" it bursts. The
ovum is caught by the Fimbriated
extremities of the Fallopian tubes.



The Corpus Luteum then forms in the wall of the ovary - first the empty sac becomes filled with blood (by laceration of blood vessels) - walls of sac grow thicker - Blood coagulates and organises - The corpus luteum itself is developed from the Tunica propria - This tunica hypertrophies even before the sac bursts - The Membrane Granulosa disappears at the bursting - The luteum only becomes well marked when the ovum that has escaped becomes fertilized - It goes on developing till 4th month of gestation - It is then as large as the rest of the ovary - It then melts away & disappears - There are cases where twins are in utero & only one corpus luteum is to be found - A ruptured ovariac always contain the elements of the corpus luteum but ~~the~~ its developement depends on fertilization

In two months if no fertilization, the remains of the ovum is merely an insignificant scar.

When the fertilization takes place ovulation is suspended & the energy of the ovary is turned towards the formation of the corpus luteum.

Parovarian

a series of tubules or fibrils - somewhat triangular with apex close to ovarian hylum - Tubules vary from 6 - 30 in number. They run parallel to each other & perpendicular to the Fall tube. A cul de sac runs underneath and the perpendicular tubes open into it. The parovarian is the homologue of the epididymis in the male. In some cases the threads are really tubes lined with ciliated epithelium. This organ is embryonic and of no physiological import - It is of great pathological import.

II. FALLOPIAN TUBES.

Form, Trumpet shaped -

Length, 3 - 5 in

Situation, upper border of broad ligs-

Structure, 3 coats serous, muscular + m m.

Function.



Fallopian Tubes

Tuba is trumpet shaped -
Sometimes called oviducts.
Each tube divided into

1. Isthmus
2. Ampulla
3. Infundibula of fimbriated extremity.

Tube is from 3-5 inches in length.
Right slightly longer than the left.
They lie in upper border of broad ligaments.

Tubes consists

1. Serous investment
2. Middle muscular coat
(unstriated fibres circularly
arranged with longitudinal
fibres externally)
3. in Isthmus. Folded m m of
stellate appearance on section
in ampulla folded m m folded
into secondary folds

The m m is covered by ciliated
columnar epithelium.
Function of tubes = oviducts.

IV. UTERUS.

Form: Pear shaped - flattened.

Size: $3 \times 2 \times 1$

Situation: Fundus level to brim

Division into Body and Cervix:

Appearance on Section:

Structure—Perimetrium, Mesometrium, Endometrium
Serous Muscular m.m

V. VAGINA.

Form:

Structure:

Relations.

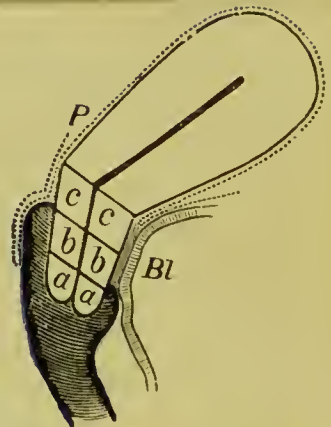
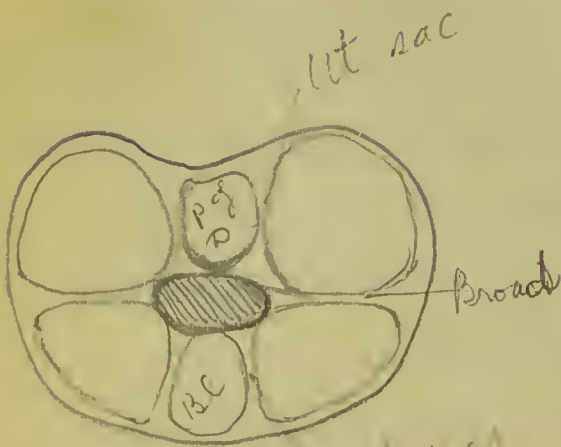
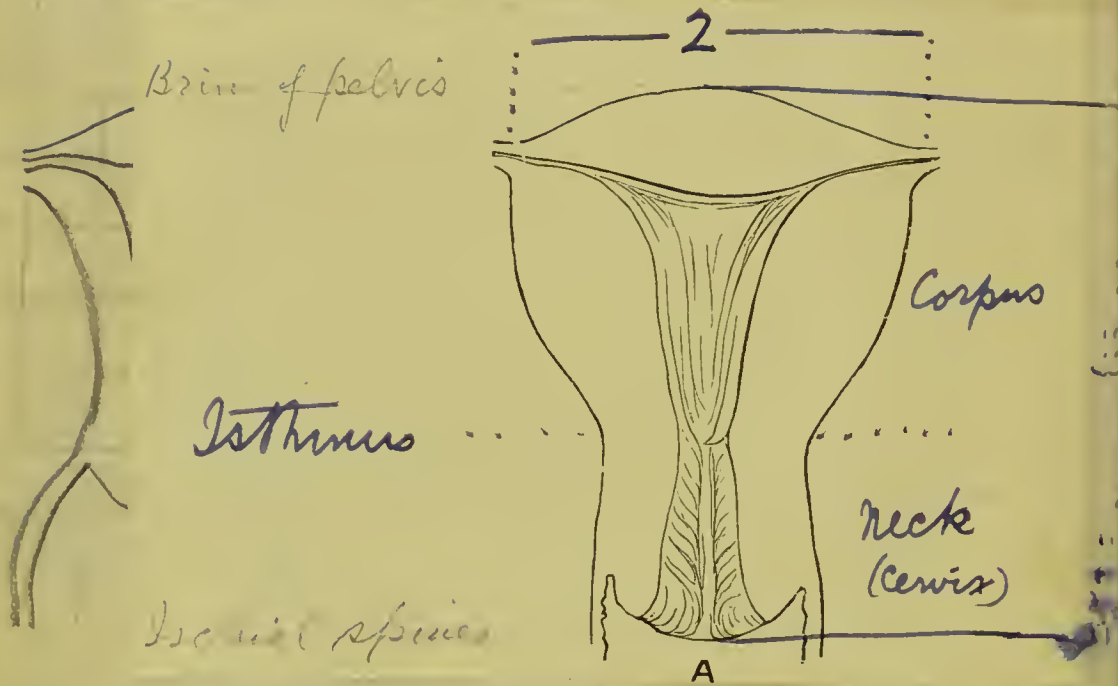
VI. PUDENDA.

Mons Veneris: Labia:

Clitoris: Vestibule: Navicular Fossa:

Perineum: Anus.

VII. PELVIC FLOOR.



a. Infra vaginal portion
b. Intermediate portion
c. Supra vaginal portion

Uterus

Pear shaped body. Flattened from before backwards. More flattened on ant surface & more rounded on post surface. 3 borders upper, right & left.

Fundus to os 3 in.

Width from tube to tube 2 in.

Thickness from surface surface 1 in.

Divided into two unequal portions by the constriction called the Isthmus.

Cervix has 3 distinct subdivisions.

In foetus cervix is longer than the body of the uterus.

Uterus lies within the Pelvic cavity with fundus level with pelvic brim. (os ext)

Os tinsae_n = level of ischial spines.

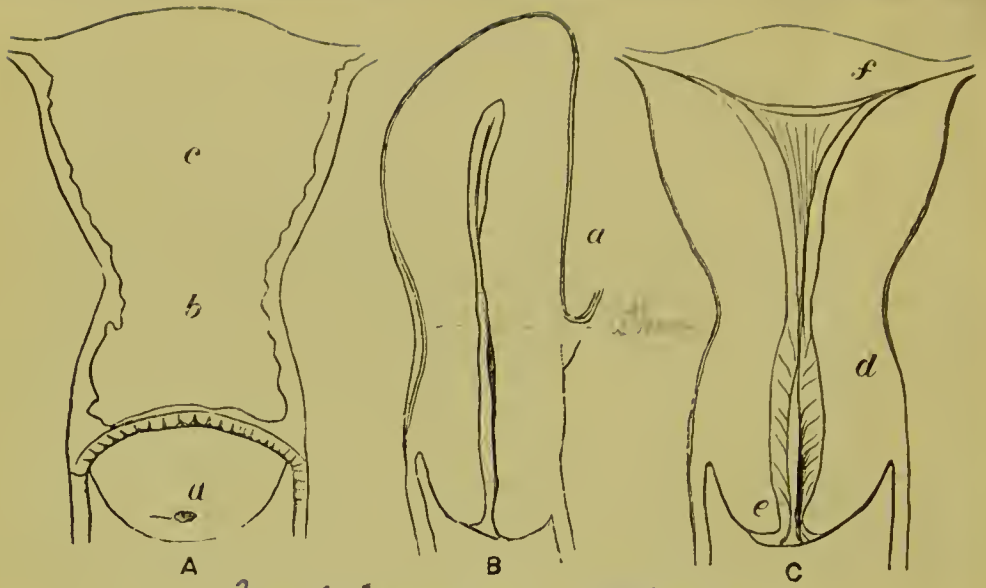
Uterus maintained in position by vaginal walls and by special ligaments.

1. Passes from isthmus to promontory.

Utero-sacral lig. - They are double folds of peritoneum.

2. In front utero-vesical ligaments.

3. From the two sides we have the broad ligaments.



Nulliparous uterus

4. Just below the Fallopian tubes you see the Round ligaments. They also have serous investment & consist of unstriped muscular fibres & they run out & pass through the inguinal ring. & end in 3 branches that attach themselves to the neighbouring structures around the ring -

Cavity of body is triangular.
Canal of cervix is spindle shaped -
os externum in nulliparous is narrow
& in multiparous is fissured.

Coats of Uterus

1. **Serous.** Ant level of isthmus passing from Post wall of Bladder. on Post level cervix.
2. **Muscular.**
Firm dense connective tissue with non-striated fibres in it.
3. **M m.** intimately attached to the muscular coat. Reddish & smooth. Surface dotted over with series of depression which



- - tubule
or
duct
.. capillary

muscular
layer

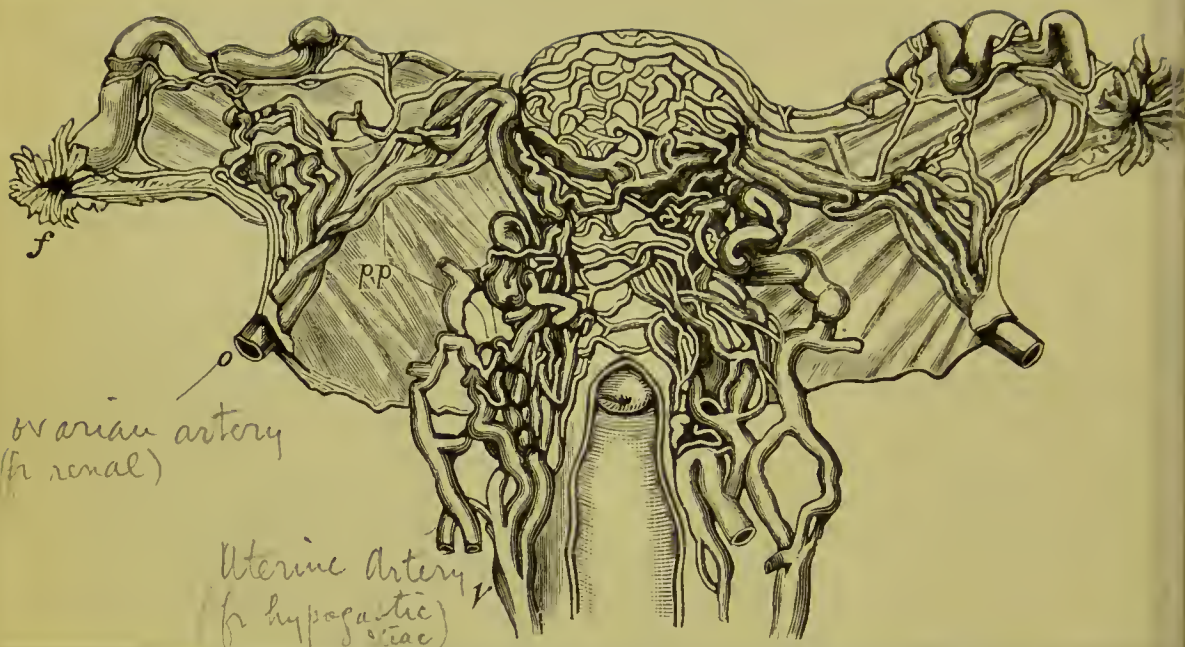
are the opening of ducts of crypts
~~to~~ which go down through the
mucosa. Thickness of mucosa
made up of granular matrix
with round cells and spindle
cells along the tubules.

m m covered with ciliated
epithelium. lashing upwards -
m m is very vascular. Capillaries
run in loops around the tubules.
In canal of cervix the m m is
thrown into folds or ridges (arbor
vitae).

In the m m of uterus there are
conn tiss corp: in the direction of
the spindle cells lined with
endothelium ~~seg~~ + lymphatic
in character. ~~They~~ These lymph
sinuses come close to surface of
mucosa and descend to the
muscular wall.

Vascular supply of uterus.

Renal artery gives off the blood
supply - this enters the broad lig
under the name of the ovarian artery.
The main uterine supply comes from



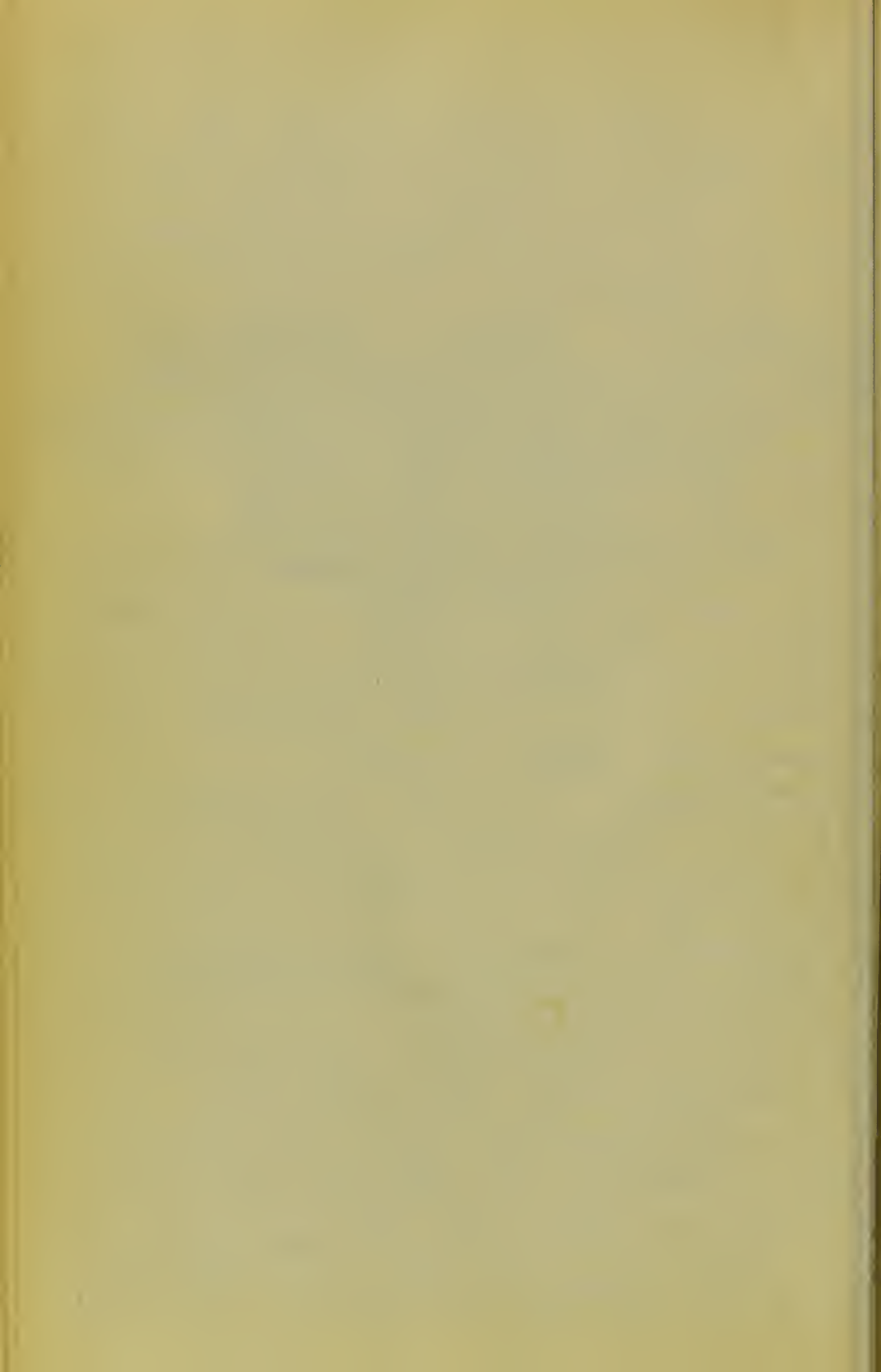
The hypogastric artery under the name of the Uterine Artery - Along the round lig we have a branch from the ~~so~~ epigastric - The vessels run towards the uterine borders - & enter the substance of the uterus running in the substance of the muscular wall. The arteries are remarkable tortuous.

Veins are found channelling the walls of the uterus - They have no middle ^{coat} ~~wall~~ but merely lined by their endothelium. Outside the uterine substance they possess all ~~the~~ 3 walls.

Lymphatics Lymph sinuses in the m m - Corpuscles are found running throughout the substance of the uterus. Nerve supply mainly sympathetic.

2 Spermatic ganglia - Uterine plexus in bifurcation of aorta.

It divides into two plexuses i.e. the two hypogastric plexuses. These send branches to isthmus & neck of uterus - they are joined by branches from the sacral plexus - all these meet at the level of the cervix at



either side in the cervical ganglion.
Vagina forms a closed canal.
— on section. It has a sigmoid
course upwards + backwards
from hymen to cervix.

Its direction is mainly
parallel to the Pelvic brim.

Wider above + narrower below
thus rather triangular. The walls
are Ant + Post. The Ant is
really superior + is the shorter
of the two being 2 - 2½". m m
~~can~~ passes directly onto the
cervix uterae at the junction of
the lower + middle thirds of the
Cervix. Ant wall has urethra
embedded in it in its lower
half. The upper half is in relation
with the Post wall of the bladder.
The posterior wall is longer than
the Ant by an inch 3 - 3½".

It passes up to junction of
middle + upper thirds of cervix -
the lower $\frac{2}{3}$ of the vagina is post
in relation with the perineal body.
Middle $\frac{1}{3}$ with rectum +



upper $\frac{1}{3}$ is in relation with cavity of peritoneum - The upper part of the vagina is called the roof, vault or fornix. We divide this into four anterior fornix which is shallow - Posterior fornix + the lateral fornices right + left - The orifice of the vagina is circular. Walls of v are lined with m m diff in character to the m m in the uterus - It is thrown into folds longitudinal columns or folds + transverse folds. This m m has lining of squamous epithelial cells - Underneath this you have connective tissue - There are papillae on the rugae. Glands have been described - outside m m we have two layers of muscular fibres - Round orifice we find a circlet of striped voluntary muscle.

Hymen Crescentic fold presenting crescentic aperture. Sometimes it is circular + the aperture circular; Sometimes cribriform.



sometimes imperforate. Sometimes edges ~~of~~ are fringed ~~by~~. After labour it is burst & then is seen as corniculae myrtiformae - On section it is triangular with base attached to vaginal wall. It consists of double layer of m m, on internal aspect has rugae on externally ~~cells~~ is smooth. It is covered with squamous epithelium. It contains ~~so~~ many vessels & nerves. External surface is exposed when labia are separated.

Pudenda

anteriorly we have the Mons Veneris lying in front of Pubis. It is triangular area base of which is separated from abdomen by distinct groove. Constituted of by fat in connective tissue invested with a thicker & firmer skin than that of the abdomen - Covered with hair which is marked off by the groove -

Labia Majora

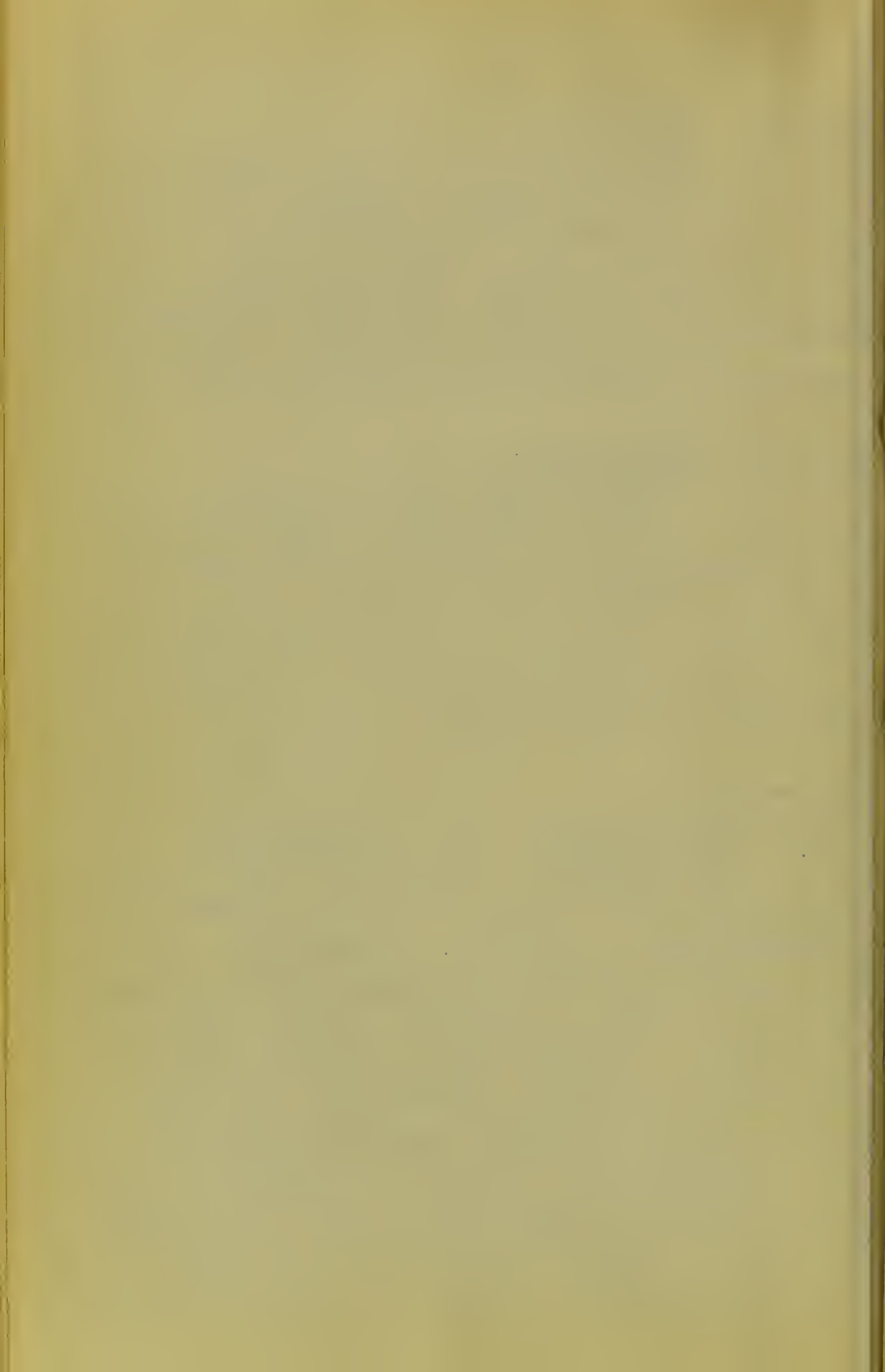
meet in front in ant commissure
 $\frac{1}{4}$ inch above the clitoris. On section
they are somewhat triangular ~~to~~ base
resting on pubic rami. ~~the base~~
we find muscular fibres inside.

Labia Minora

are skin folds - having nerve
bulbs ending in them. The upper
fold of these nymphae form a
prepuce for the clitoris. They may
project externally.

Clitoris

Found at apex of vestibule.
Glands, body, + clura. Squamous
~~epithelium~~. Very vascular +
erectile. - Rich arterial supply -
Full of Venous plexuses. Very
sensitive organ because of the
numerous nerves with which it
is supplied. 4 or 5 times as
sensitive as the penis. on the
end of the nerves in the
gland there are genative corps.

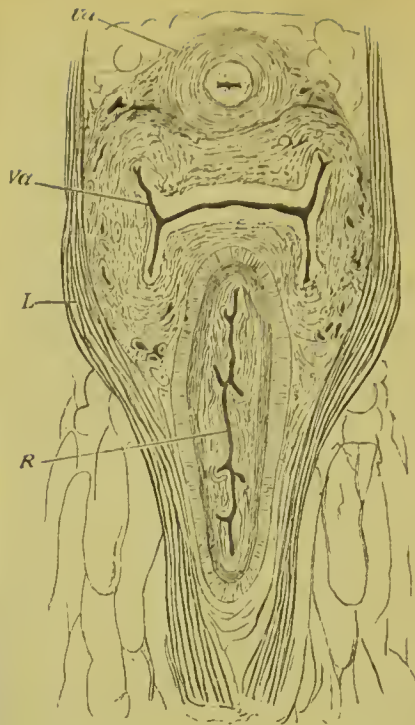


Meatus Urinae lies in the vestibule or atrium which is a Δ shaped space lying between clitoris + vagina + bound by nymphal - This atrium is covered by m m with squamous epithelium. racemose glands in it. underneath this m m is a rich network of veins - Each side of vagina are found ~~two~~ a leech shaped mass of veins which is also erectile so to speak - These are called the vaginal bulbs.

Fossa navicularis lies between hymen + ~~posterior~~ ^{perineal} fourchette.

Two glands one at either side of vagina called Bartholin glands. They bathe the parts. They lie in the labia majora + are racemose - orifice of duct at about level of hymen -

Floor of Pelvis (forms one layer ^{then the} Levator Ani (in three parts) Transverse Perinaei. Constrictor Vaginal -



MENSTRUATION.

THEORIES OF MENSTRUATION.

PHENOMENA :

- I. General. *Height in blood + menses in breasts - hair - cad-*
- II. Local.
 1. In Ovary, *evolution.*
 2. „ Fallopian Tubes, *tissue d*
 3. „ Uterus. *a. b. discharge*

STAGES OF DISCHARGE. *evolution*

CHEMICAL COMPOSITION. *evolution*

QUANTITY. } *2-16 3 usually 13 per day*

HABIT.

DURATION. } *2-3 days*

FREQUENCY—Periodicity. *18 days in 70°*

DATE OF COMMENCEMENT—Puberty. *14-16 years*

(Modifying influences)

DATE OF CESSATION—Menopause. *45-50 years*

NUBILITY. *may be before*

Compressor Uethrae, Sphincter Ani -
These constitute the subcutaneous
layer of the Pelvic floor.

Physiology of Female

Mortality of Sexes up to 14 is
about equal -

Between 14 + 18 Mortality of
118 Females + 100 Boys -

Menstruation

cleansings, periods, monthlies, menses,
~~brulation~~ 3 stages

1. Invasion. escape of mucus.
2. Persistence. escape of true fluid.
3. Cessation or Decline

During invasion the sebaceous
follicles give a peculiar &
naughty smell.

During invasion we have blood,
epithelium from vagina, cervical
canal, & uterine cavity.

discharge is fluid & non-coagulable.
During discharge the uterus is
turgid & erect.

VIIA.

Influence of Climate on Age at which Menses appear.

AGE.	WARM.	TEMPERATE.	COLD.
8	9	2	...
9	24 or 1·4 p. c.	7	...
10	53 „ 3·2 „	26 or ·5 p. c.	1
11	240 „ 14·6 „	148 „ 3·3 „	5 or ·1 p. c.
12	407 „ 24·8 „	274 „ 6·2 „	28 „ ·5 „
13	381 „ 23·3 „	478 „ 10·9 „	133 „ 2·8 „
14	259 „ 15·8 „	683 „ 15·0 „	143 „ 3·3 „
15	125 „ 7·6 „	832 „ 19·0 „	872 „ 18·4 „
16	62 „ 3·7 „	705 „ 16·0 „	874 „ 18·5 „
17	43 „ 2·6 „	567 „ 12·9 „	718 „ 15·2 „
18	10 „ ·6 „	316 „ 7·2 „	628 „ 13·3 „
19	9 „ ·5 „	182 „ 4·1 „	422 „ 9·3 „
20	4 „ ·2 „	86 „ 1·9 „	321 „ 6·8 „
21	5 „ ·3 „	43 „ ·9 „	132 „ 2·8 „
22	1	8	83 „ 1·7 „
23	3	2	30 „ ·6 „
24	0	8	14
25	...	2	5
26	...	...	5
27	...	...	...
28	...	...	...
29	...	...	1
	1635	4369	4713

During cessation we have a gradual return to mucus discharge & then it ceases altogether. Quantity lost at a period varies from 2 - 16 ounces - Usually each woman has an habitual amount of discharge. More discharge in brunettes. The time occupied by the flow constitutes the menstrual habit. In 6% of women their habit is unsteady.

Habit implies duration of flow and amount of loss - Generally an ounce a day - One diaper = one ounce -

Duration in most cases is steady - (Irregular in about 7%)

8 days	26 %	} unsteady cases
3 "	20 %	
4 "	16 %	
5 "	11 %	

If Duration is less than 2 days or exceeds 9 days there is probably some morbid process there.

VIII.

Influence of Race.

IN HUNGARY. COMMENCEMENT OF MENSES.

Slavs . . .	between	16-17	years
Magyars . . .	„	15-16	„
Jewesses . . .	„	14-15	„
Steyerians . . .	„	13-14	„

Influence of Social Condition.

Medium period of commencement . . .	15·49	years
Women from higher and middle ranks . . .	14·78	„
Poor women	16·00	„

Frequency

28 days	in	70 %	} In constant type.
30 "		13 %	
21 "		1 %	
27 "		1 %	

Cycle to be counted from commencement of one period to commencement of next -
About 10% of women are irregular in type.

Date of Commencement

Puberty -

Generally 15 yrs old -

Any way between 14 + 16 yr old.

Climate

In warm climate puberty occurs early - + vice versa -

Race Anglo Indians menstruate at age common in England etc.

Social Condition

Ease + luxury lead to early menstruation -

IX.

Age at which it ceases—Menopause.

Ceased from	36-40	in 272 cases = 11·87 per cent.
	41-45	„ 595 „ = 25·97 „
	46-50	„ 940 „ = 41·03 „
	51-55	„ 334 „ = 14·58 „
Before 35 and after	55	„ 150 „ = 6·54 „
	<hr/>	
Total	2291	99·99

Theories .

Menopause

Usually between the ages of 36-55.
46-50 is the usual time or rather

50% 45-50

25% 40-45-

25% { 35-40
50-55-

Ovaries indurated + atrophied + are
scattered every where - Graffian
follicles no longer ripen & burst -
Fallopian tubes atrophy + sometimes
become occluded. Uterus
atrophies - sometimes occluded -
Mammæ shrink as to their
glandular elements. Hair on
face may now be seen -
may stop suddenly or gradually.
Menstruation goes on about 30
years - the earlier a girl
menstruates the earlier the
menopause sets in.

Ovulation and Menstruation have
a distinct association between
them. ~~Exp~~ Extirpation of

ovaries bring about stoppage of menstruation.

Removal of both ovaries produces atrophy of the uterus in dogs - There is a nerve center in the ovaries themselves that ~~is~~ is nutritive to uterus & that governs the contractions of the uterus.

The Uterus in Menstruation

The m m swells up & is wrinkled & thrown into depressions. Vascularity increases, tubercles enlarge, cells of stroma increase very much in number, then blood escapes by opening of the capillaries - and m m is shed.

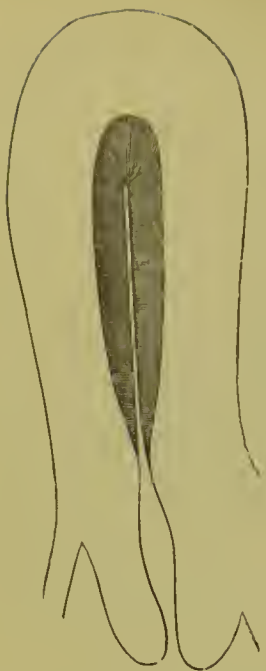
Some say all the m m is shed

Some say only the epithelium

Some say not all the m m

Some say no epithelium or m m is shed at all.

Some say at places epithelium is alone shed, at others epithelium & m m & at others nothing is shed.



Just before haemorrhage
occurs



after flow.

Others think the Nidation theory is correct (Halliday Croom).

Some say epithelium undergoes fatty degeneration others that it is due to overdistension of the capillaries underneath.

Menstrual Cycle

Divided into 4 stages (Heep)

1. Resting Stage 14 days
2. Period of Growth 7 days
swelling of mucosa, ~~en~~ enlarging of glands, & growth of vessels.
3. Period of Degeneration 5 to 8 days
vessels break down. lacunae form around them - lacunae break & burst & carry some tissues with them.
4. Recuperation or Stage of Repair. 4 to 5 days
Parts shrink & regenerate

This period of growth No 2. prepares the uterus for the reception of the Ovum -

As long as a menstruation takes place a woman may become a mother.

Proportion of Deaths per 1000 at different ages of the un-married, married, and widowed.

Ages.	Bachelors.	Husbands.	Widowers.	Spinsters.	Wives.	Widows.
15—20	6.89	51.32	774.	7.53	11.86	12.31
20—25	12.88	8.92	49.6	8.32	9.92	23.62
25—30	10.17	6.24	21.84	9.02	8.98	16.9
30—35	11.51	6.82	19.17	9.87	9.36	15.03
35—40	13.15	7.52	17.50	10.87	9.29	12.73
40—45	16.62	9.55	18.89	13.28	10.14	13.30
45—50	19.60	11.47	22.2	15.71	10.69	15.20
50—55	25.8	15.61	26.8	20.97	14.11	18.71
55—60	32.1	21.5	34.17	26.90	19.29	24.47
60—65	45.92	32.6	47.5	40.52	30.75	37.07
65—70	58.5	44.8	62.97	58.3	45.3	53.5
70—75	85.1	71.5	95.4	85.5	72.67	86.1
75—80	123.	114.5	143.9	140.5	109.4	126.7
80—85	202.7	182.8	221.8	222.5	172.5	198.
85—90	268.4	228.6	263.05	305.	205.1	264.
90—95	282.	279.	319.	314.1	256.3	308.
95—	480.	357.	385.	387.7	416.	324.

CHANGES IN THE UTERUS IN CONNECTION WITH PREGNANCY.

1. IN THE DEVELOPMENT OF UTERUS :

Lower Uterine Segment :

Cervix.

shortening

2. IN ITS POSITION. *Deviated to right & left border comes up out*

3. IN ITS ABSOLUTE VOLUME AND DIMENSIONS.

4. IN ITS STRUCTURE: (1) Peritoneal coat,

(2) Muscular „

(arrangement of muscular fibres),

(3) Mucous coat,

Formation of decidua vera,

„ reflexa,

„ serotina.

Changes which these undergo.

Nubility or the Marriageable Age.

Woman should not marry before twenty.

Fertilization

1. Is said to take place just on the surface of the ovary -

2. In the tubes

3. In the Fundus

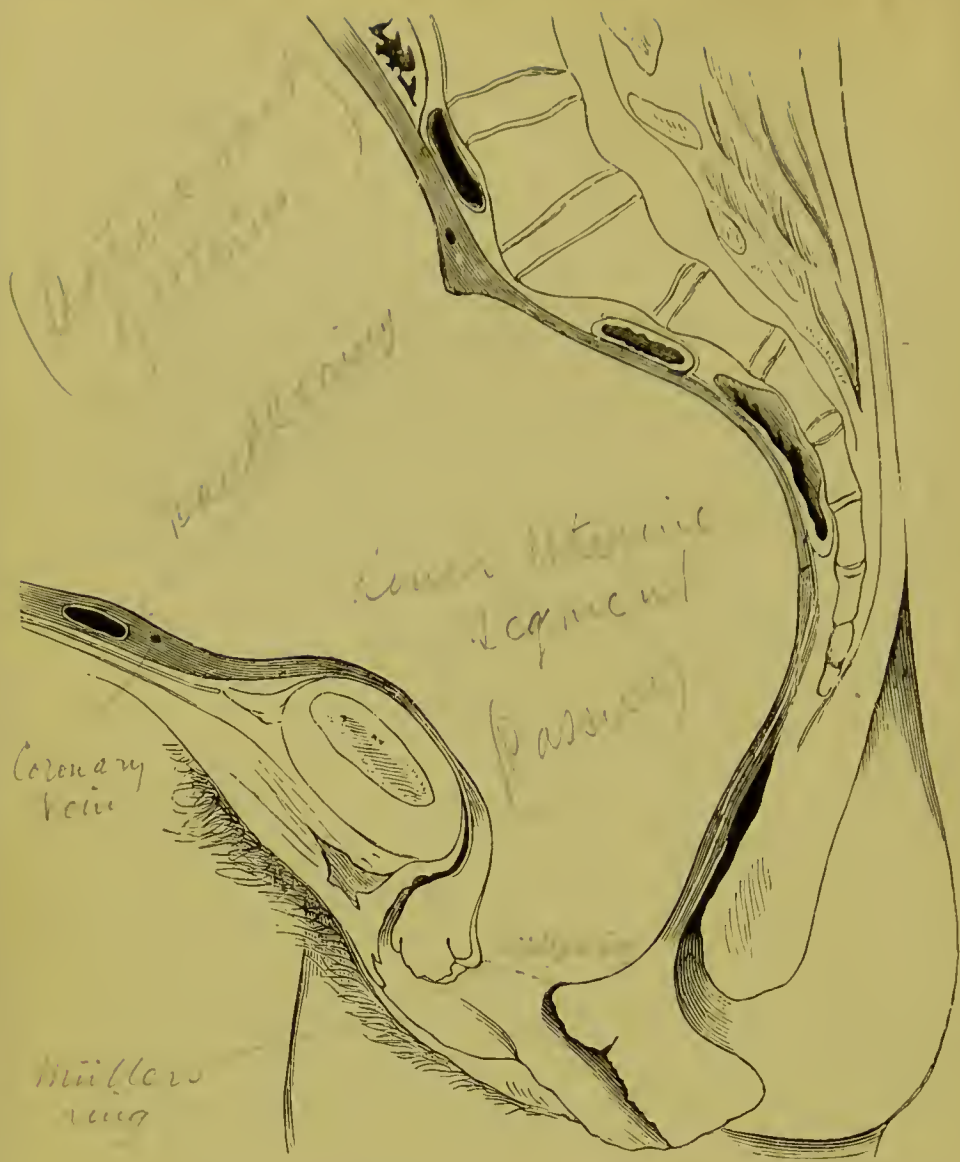
no 2 probably correct.

Changes in Uterus

Uterus becomes rounded

The Cervix

After mid term of preg the cervix seems to become shorter & shorter. The internal os can be felt however as Mullers ring right up to the close of pregnancy. Between Mullers ring and Baudle's ring ~~of~~ you have the lower uterine segment - Above Baudle's ring the uterine is active as to its muscle



Passive
below it is ~~not~~ so active.
Bundles ring is also called
the retraction ring.

Externally the bundles ring
corresponds with the point where
the peritoneum is reflected onto
the back wall of the bladder -
Mullers ring is really found
a few lines below the os
internum.

Changes in Position

Rises out of Pelvis after 3 months
& becomes abdominal. as it
rises its ant. surface lies
immediately on abdominal wall
intestines being pushed upwards
backwards & to the sides -
As it rises it deviates towards
the right side (as a rule).
But in the unimpreg: uterus there
is a slight deviation to the right
side.

The Uterus is also rotated
on its axis so that the
ant surface looks somewhat

X.

Table of Increase in size of Uterus during Pregnancy.

STATE OF UTERUS.	VERTICAL DIAMETER. Inches.	TRANSVERSE DIAMETER. Inches.	ANTERO-POSTERIOR DIAMETER. Inches.
Vacuity	3	2	1
3rd month of gestation	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
4th „ „	4	4	4
6th „ „	$8\frac{1}{2}$	$6\frac{1}{4}$	$6\frac{1}{4}$
9th „ „	13	$9\frac{1}{4}$	$8\frac{1}{2}$

Increase in size of Muscular Fibres.

	LENGTH.	WIDTH.
During Vacuity .	·002 to ·003 of a line	·002 of a line
At 5th month .	·06 to ·12 „	·0025 to ·006
At second half of 6th month .	·1 to ·25 „	·004 to ·006

to the right. the left border
this comes forward -

Changes in Absolute Volume + Dimensions

weight increased 24 fold
length 3 fold
cub capacity 2 fluid 3 to 10-15 fluid lbs.

The thickness of the uterine wall
does not increase in any stage
of pregnancy - In the later stages
it becomes slightly thinned.

The peritoneum grows with the uterus.
The mesometrium -

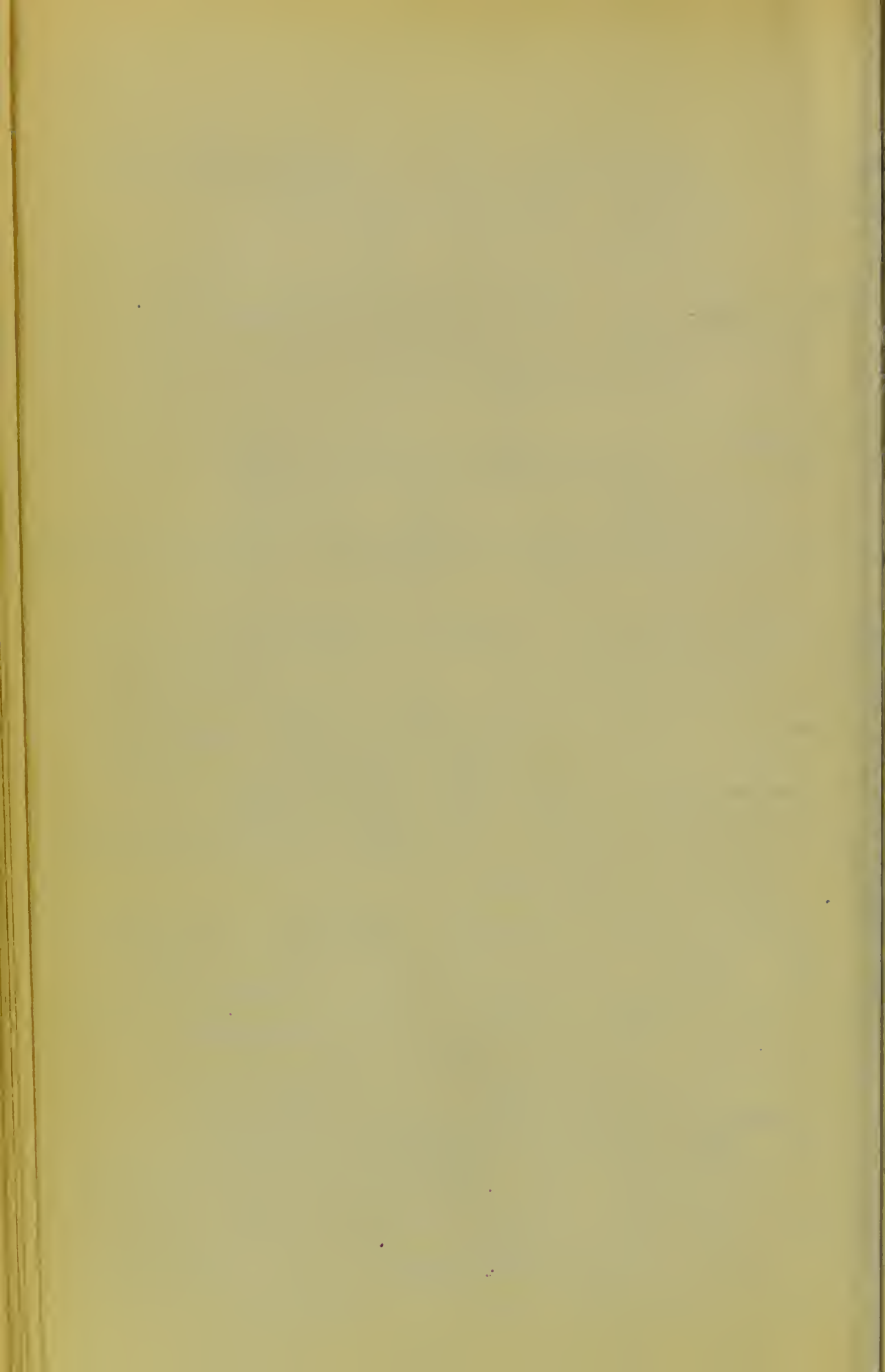
The fibres grow much longer + some
think they increase in number -

At full term these muscular
fibres are arranged in layers

1. Superficial + longitudinal
anniform or jughandle fibres.

These fibres help to fix the ligaments
Not all longitudinal but also
transverse + some oblique.

The fibres that belong to the



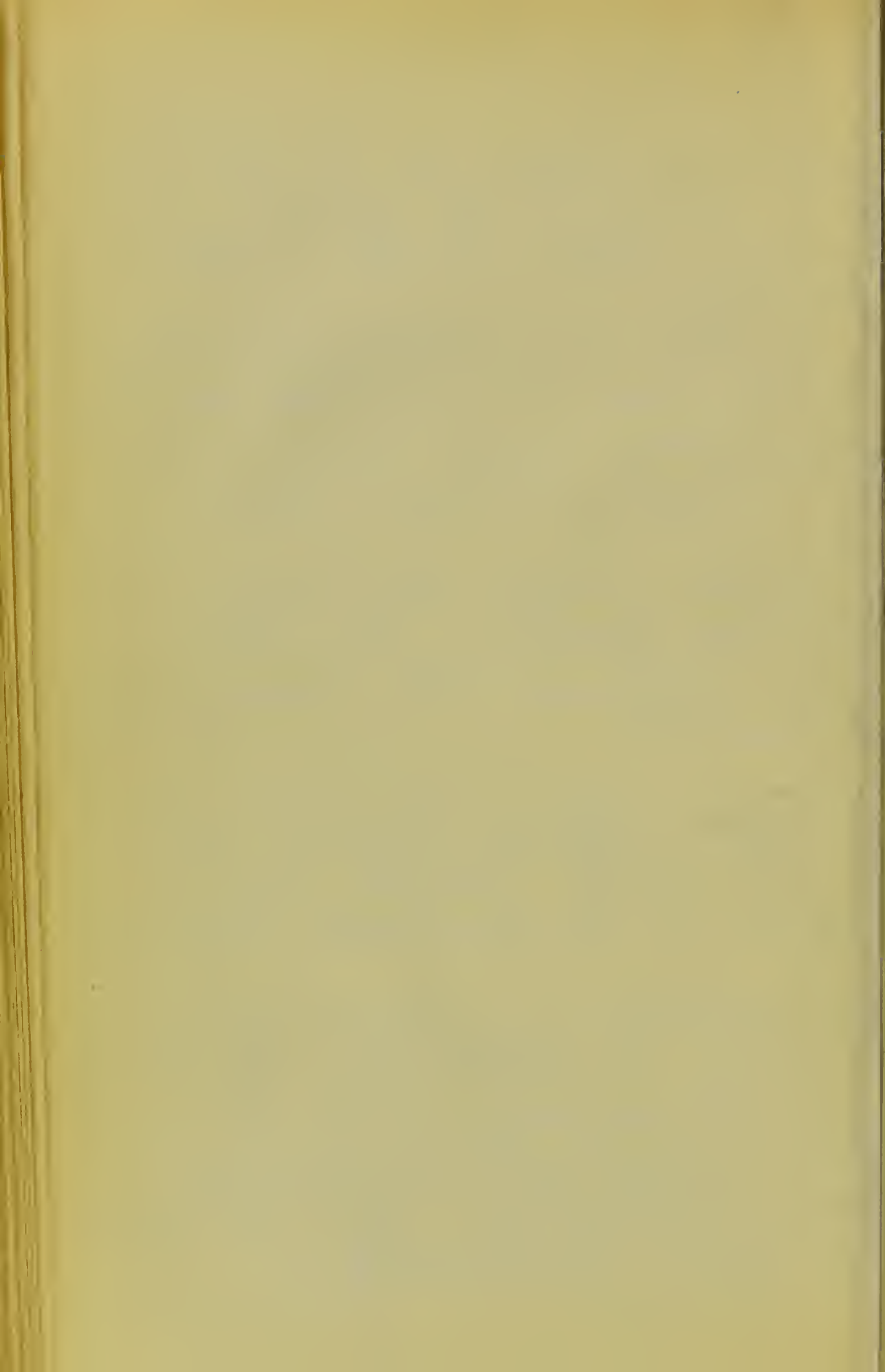
superficial layer on the ~~the~~ Post
all run into the deeper sub-
mucous layer on the anterior
surface

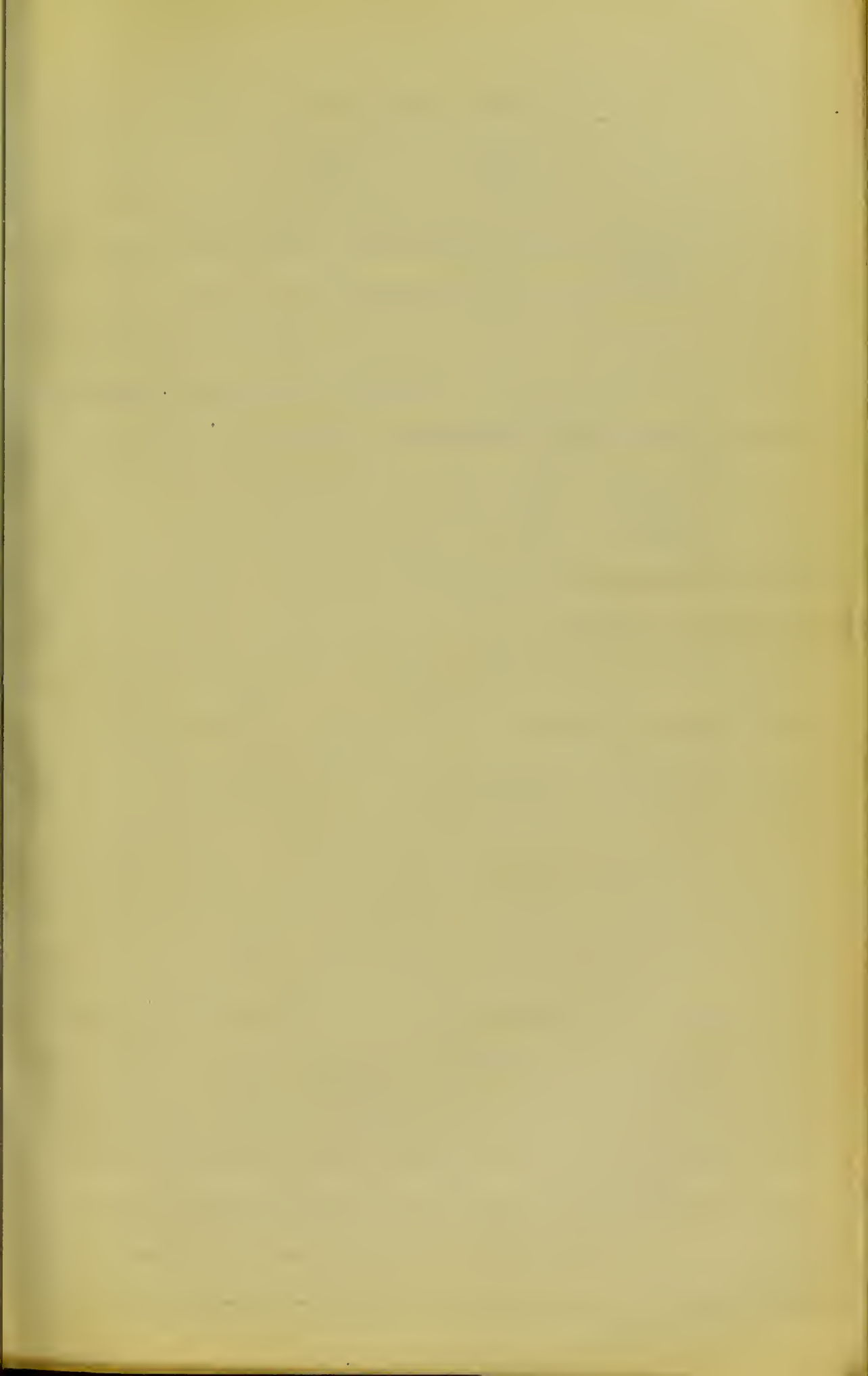
Deeper or submucous layer -
fibres run in circular fashion
especially well seen round
the orifices of tubes + cervix.

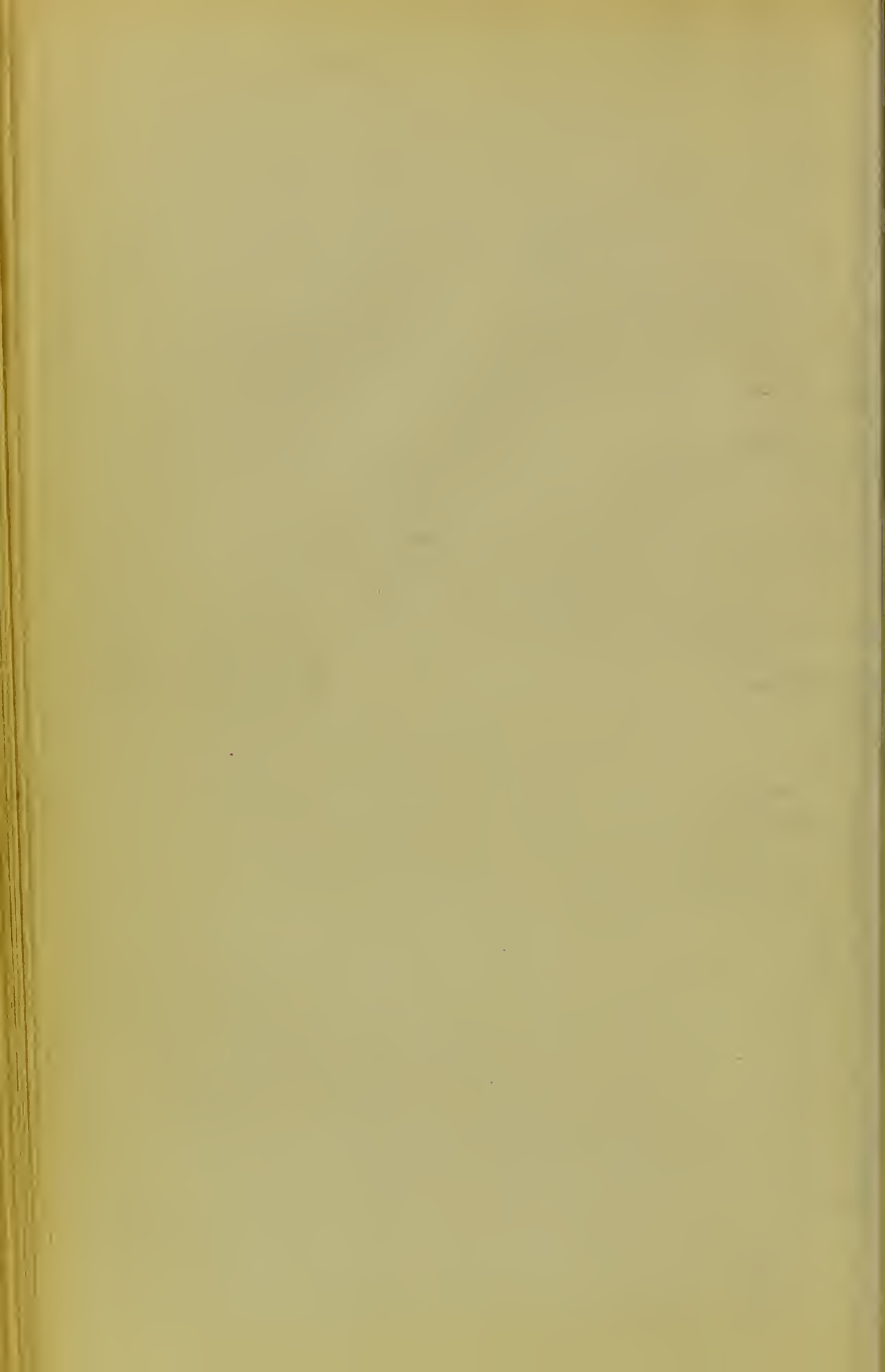
Middle layer has fibres in
irregular fashion. The fibres
run around the venous vessels
+ canals

The lower uterine segment after
the 6th month becomes much
thinner in its muscular layers.

The Arteries in preg increase
in size + retain their tortuosity.
In last weeks when lower
uterine segment undergoes
pass distention the arteries
lose their tortuosity.







Veins ~~tear~~ become enlarged
+ also lymphatics -

The Nervous apparatus increases
in size the ganglia enlarging
+ nerve filaments also
increasing.

In endometrium

The Maternal membrane is
rough + shaggy on its surface
+ is a portion of the uterine
mucosa that becomes separated
from the rest - on opening this
membrane up the inside
is smooth + dotted over with
mouths of uterine follicles.
This membrane clothes the whole
cavity of the uterus.

The Decidua vera presents on the
surface the epithelial investment
these begin by + by to become
flattened even squamous towards
the end of pregnancy. The
decidua vera has three layers

1. superficial compact layer.
2. loose reticular layer
3. deep glandular layer attached
to muscular fibre

Decidua serotina

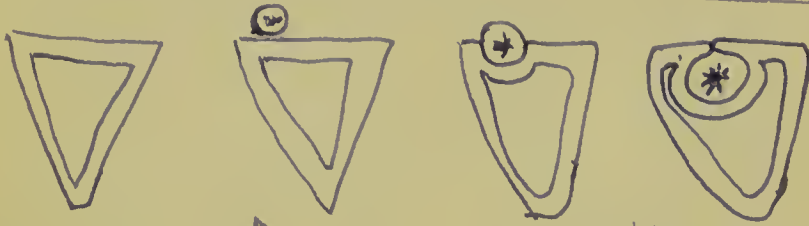


Decidua reflexa



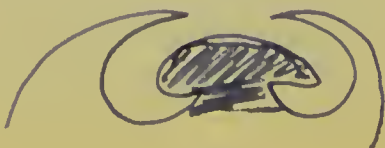
epithelial cells both sides

Decidua vera



Hunter's antiquated theory

chorion
amni



The fertilized ovum usually becomes caught in the upper part of the uterus.

By 2nd ovum nearly fills uterine cavity.

By 3rd month the whole surface of decidua reflexa is in total apposition to the decidua vera.

By 5th month they are undergoing retrogressive changes.

The Decidua serotina is better named the utero-placental-mucosa-placental-mucosa.

The outermost membrane of the ovum is the Chorion. -
Under that is the Amnion.

Ovum, Mulberry mass, Blastodermic sac.

Amnion is formed from reflexion of epiplast -



6 weeks.



The membrane is first composed of cubical epithelial cells but these become much flatter afterwards.

Surface of Amnion is smooth throughout. A few amniotic warts are seen near the cord.

It lines the cavity containing the foetus.

The Chorion is the outermost layer of the epiblast. Epithelial investment on its surface. Underneath this conn. tissue of the mucus type.

Villi at first grow from the whole of its surface - Many are simple + many branched. The villi grow much more strongly where they will be permanent i.e. in the serotidan area. The other villi at 2nd month atrophy + disappear + the chorion in this area is now

Contents of Gravid Uterus
I. Membranes. Decidua
Chorion
Amnion

II. Vesicles of Early Pregnancy
Umbilical vesical
Alkandoid vesical

III. ORGANS BY WHICH FŒTUS IS ATTACHED TO UTERUS:

1. Umbilical Cord:

Origin,

Length, 18 - 24"

Attachments,

Central - Marginal - Eccentric

Structure,

Torsion,

Convolution.

2. Placenta

Smooth (or Chorion laevae)(?).
as distinguished from the
Chorion Frondosum -

The Umbilical Vesical atrophies
& disappears in 6th week.

A little yellow spot (pin head) may
sometimes be seen on full term
placenta - This is the remains
of the Sac.

Projecting from lower end of gut
the allantois projects.

Umbilical Cord

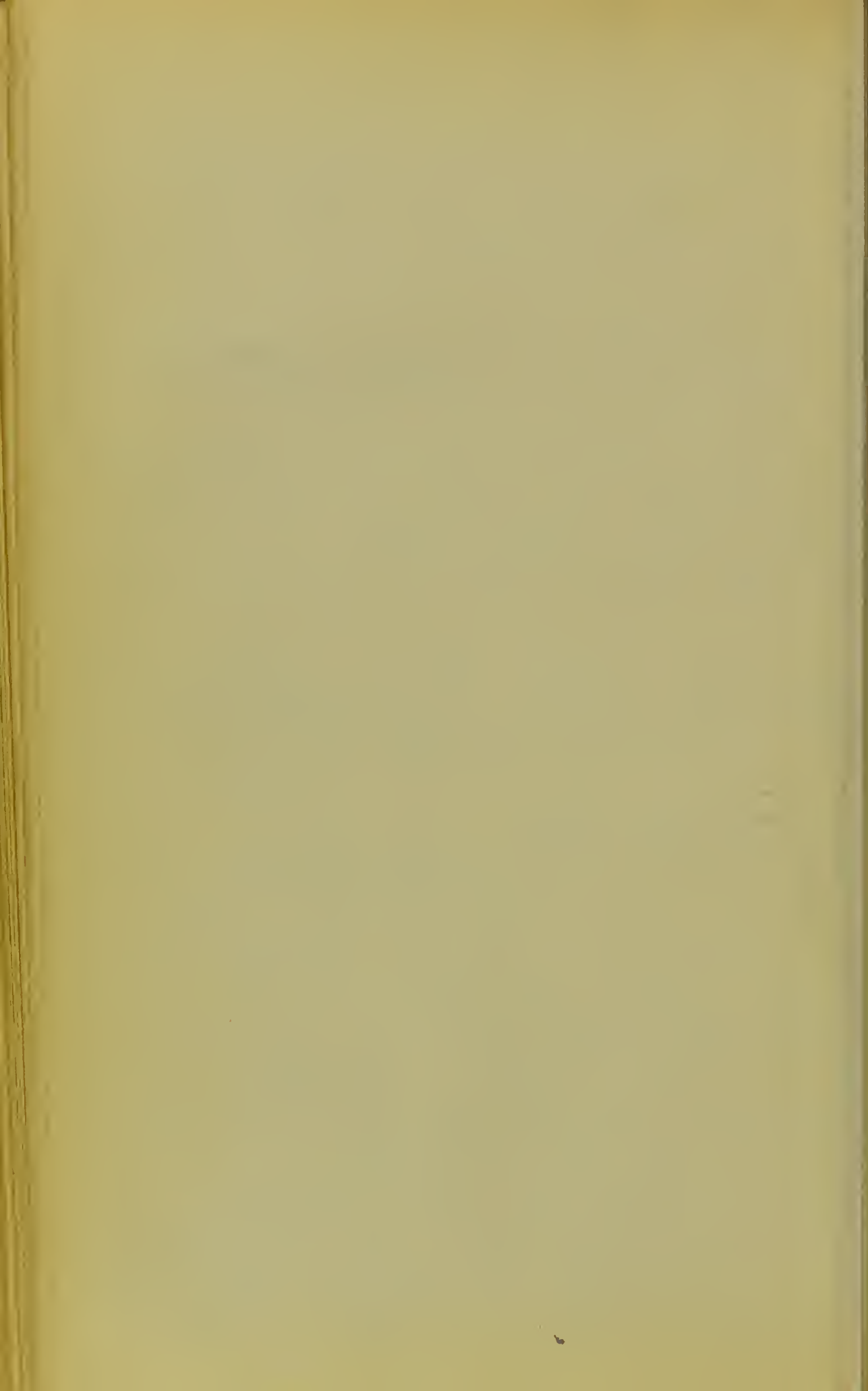
Diff. cords vary in thickness.

Average $\frac{1}{2}$ " in thickness - The
Whartonian Jelly helps to
well the cord out -

18 - 24" long - Average $2\frac{1}{2}$ ".

Unusual cases 2 - 8" very rare -
unusually long 3' - 6' ft.

When unusually long found
wounded round & round the foetus -
Cord generally $1\frac{1}{2}$ longer than the
child.



The cord may be placed in the

1. Center of the Placenta (very rare)
2. Near the center
3. Near the margin
4. at the margin (battledore)

Cord may divided into two before joining the Placenta -

Sometimes vessels circulate in the membranes for some distance before joining the Placenta.

The Cord is composed of

2 arteries

1 vein

Embedded in Mucus tissue

covered with Amniotic investment.

Nervous elements absent -

The Mucus tissue is continuous with the mucus tissue lying between the Amnion + Chorion.

It is found disposed in 3 divisions around the vessels -

- 3 conical points around the umbilicus.

XI.

Direction of Umbilical Torsion.

IN 120 CORDS:—

Twist absent	in	3 . . .	Length of cord	12-13 inches.
Left Twist	„	86	„	17-32 „
Right „	„	15	„	18-28 „
Erratic „	„	5	„	9-13 „
At first left and then parallel	} „	2	„	18 „
At first parallel and then left	} „	4	„	18-22 „
At first right and then parallel	} „	1	„	19 „
At first right, par- allel, right	} „	1	„	23 „
At first right, par- allel, left	} „	2	„	24 „
Right, left, right, left.	} „	1	„	32 „

Containing branching corpuscles -
The whole is invested by
amniotic investment.

The two arteries come from the
hypogastric arteries.

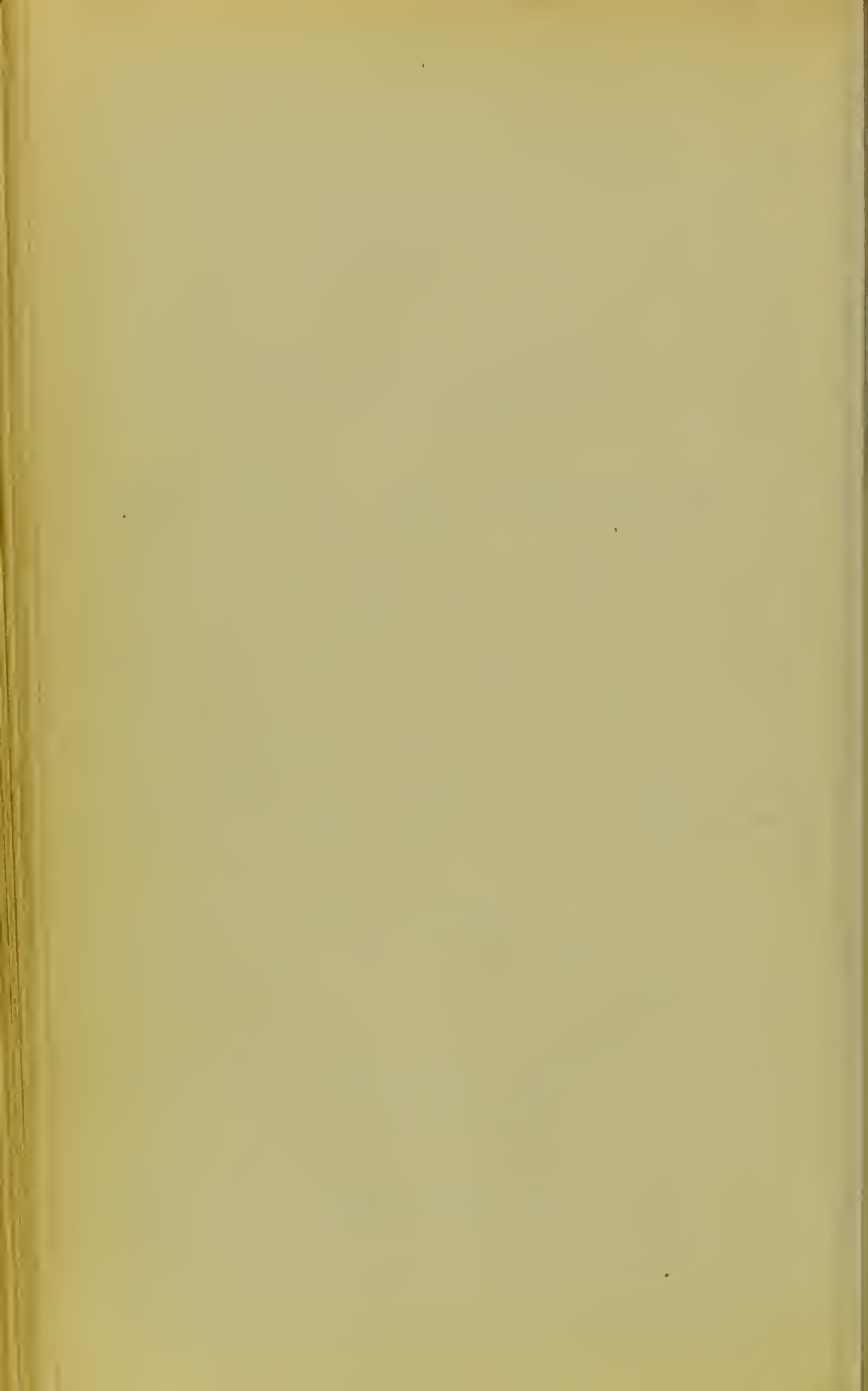
These ~~vessels~~ vessels have walls made
up of fusiform muscular fibre
cells with rod shaped
nuclei - Lining them we have
endothelium thrown into folds
& ridges (in the vein especially).
These ridges are due to the tortuosity -
These vessels have no elastic
coat

Increase of width of arteries
from from foetal to Placental
extremity =

How are these vessels nourished?

Nobody knows -

Cord is twisted usually a right
hand twist.



May be as many as 40 twists of a cord. They are more numerous towards foetal end.

Twist on cord begins to show itself from 6-12 week.

In cases of left tortion the cord passes over ~~the~~ right thorax of infant over right ~~of~~ shoulder behind neck & over left shoulder and on ~~to~~ ant aspect again.

May be coiled two or three times round.

And in right tortion vice versa.

Tortion may become exaggerated & bring about the death of the infant.

The coiling of the cord round the foetus prevents "Prolapsus Funis" but may cause death of the child.

Sometimes the child ~~slips~~ slips through the loop &

1. Diffuse as in Pig
2. Cotyledon as in Cow. Sheep.
(beginning of deciduation)
3. Zona placenta (carnivora)
(deciduation established)
4. Placenta (human + higher apes)

forms a true knot.

Vessels may break up as they reach the membranes & form a velumtous attachment. In these cases the labour is very apt to be premature. Predominance of females seen here as in other anomalies.

Placenta

Spongy cavernous organ.

1. maternal element
2. foetal element

The point of application of ovum to uterus becomes more vascular both in ovum & uterus. projections (villi) grow from one into the other - Blood vessel loops (capillaries) grow into these villi.

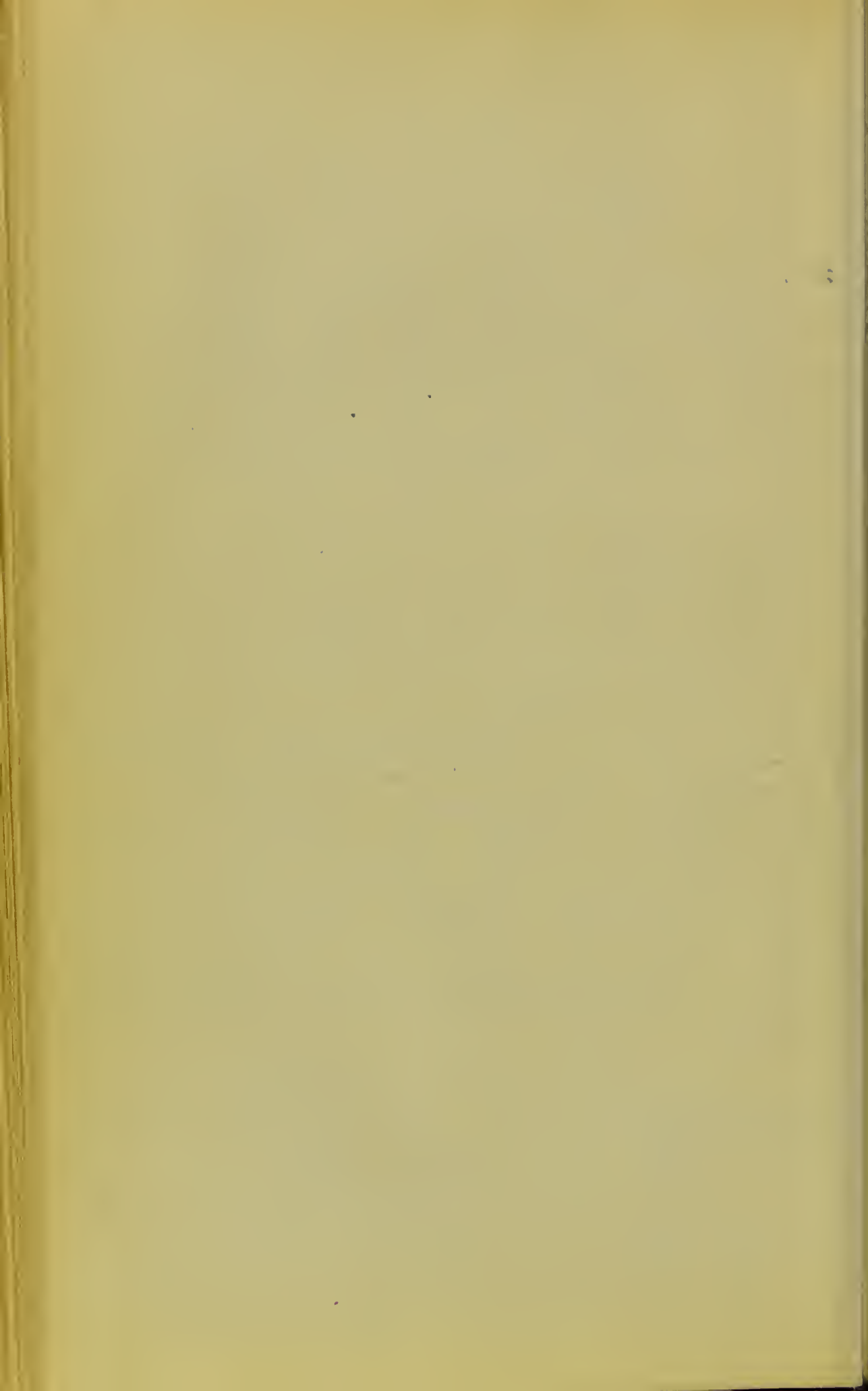
Placenta

6" - 8" in in diameter.

20" - 24" in in circum.

1" thick -

10 - 20 $\frac{3}{4}$ weight. grows at



rate of 3 $\frac{1}{3}$ a month from
3 months till 28 weeks -
2 surfaces.

Foetal + Uterine.

Foetal surface with cord
attached + amnion
coverings.

on section :-

1. Amnion
2. Conn: tiss layer (continuous
with conn tiss layer of chorion).

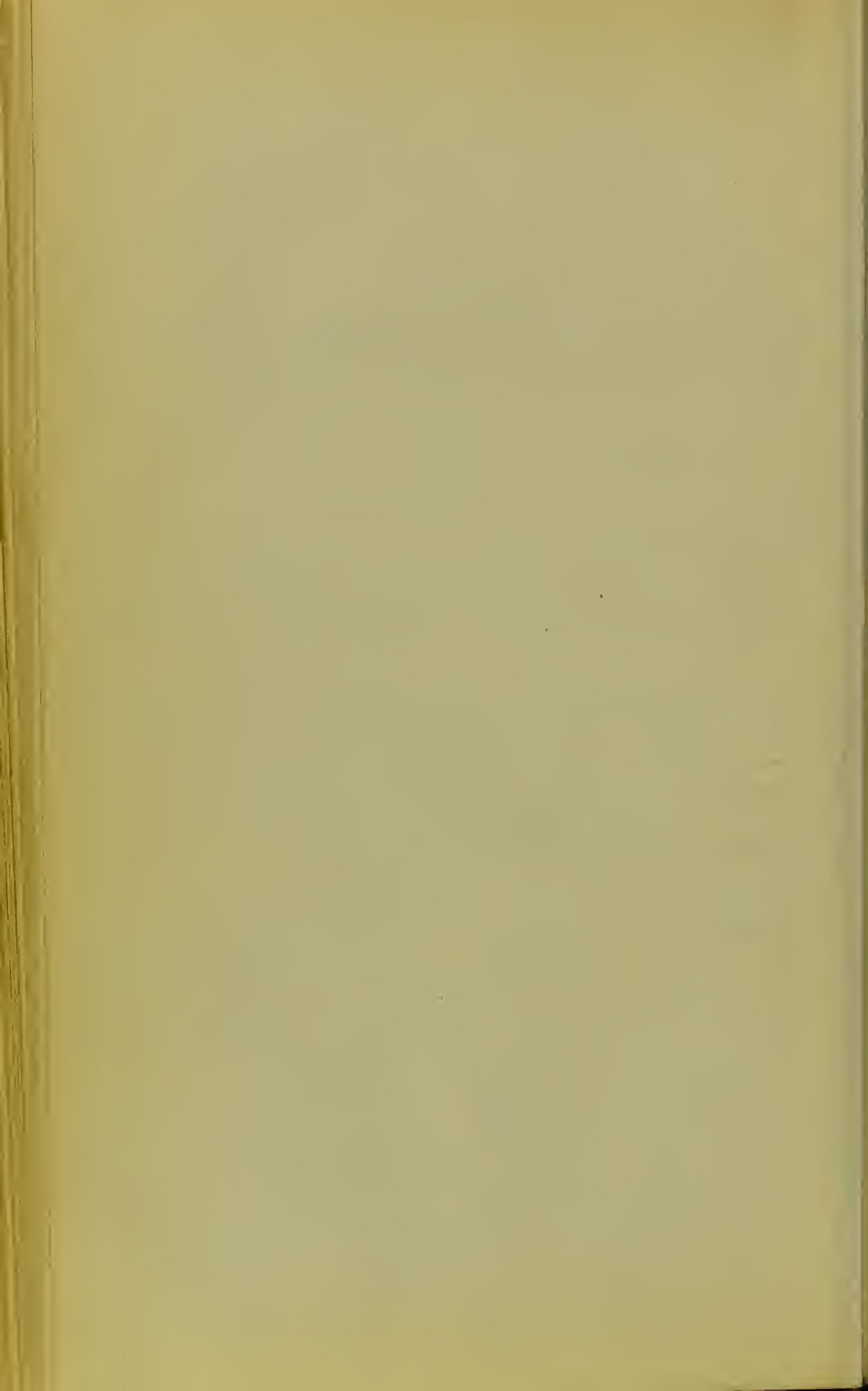
The Maternal portion is developed
from the serotidinous area
to which the ovum first
became attached.

3 layers - on section

1. Uterine layer (does not deciduate)
2. Trabecular layer ~~XXXXXX~~
3. Subchorionic layer (deciduates)

The Uterine layer lies in
apposition with the muscular
wall of the uterus.

3. Subchorionic layer is formed
of dicidual cells - large
+ nucleated + is thrown



off with the foetal placenta.

Trabecular layer

Absolute muddle -

Read Halliday Croom -

The arteries of the Maternal Placenta enter blood pools or sinuses in which the foetal capillaries are bathed. The blood escapes through emergent veins which leaves the circular sinus -

The intermediate vessels or blood spaces (pools) -

The formation of these is as follows - The capillaries become distended & varicose - The villi of the ~~co~~ chorion then grow down -

The foetal portion is developed from the chorion frondosum -
3 varieties of villi -

1. Simple non-vascular villi

2. Placenta :

Form and Dimensions,

Structure: (1) maternal portion—uterine, trabecular
and sub-chorionic layers ;

(2) foetal portion—structure of villi.

Relation between foetal and maternal blood.

Seat of its Implantation.

Functions.



~~as seen~~ merely ~~acts~~ act
as retainers or roots -

2. Single stems that project
into the nearest blood pool.

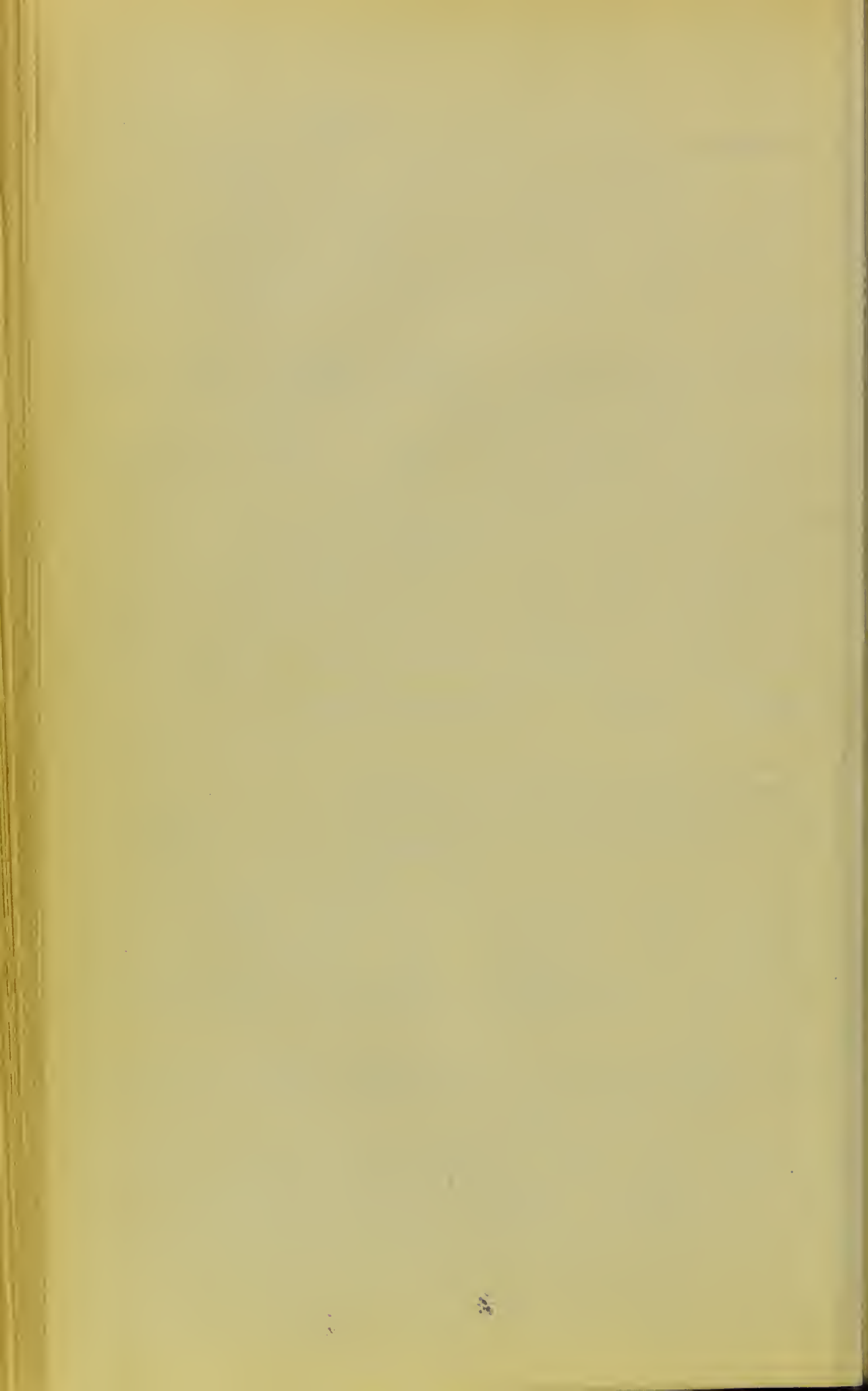
~~They~~
3. Racemose. By ~~far~~ far the
greater number - They go
right through the blood pool
& their extremities root
themselves in the uterine
portion of the Placenta - The
portion that acts as root is
~~not~~ non-vascular -

fully formed villi -

In it lies a capillary loop
lying in a conn: tiss: matrix
invested by layer of epithelial
cells, a single layer of epithelium.

Is the Syncytium maternal or foetal?

at root of Umbilical cord the
two arteries often communicate.
When a branch has been
given off to a coty., there is no
anastomosis.



Calcareous deposits are sometimes found in the Placenta at the points where the fixation villi are embedded.

Normal site of Placenta.

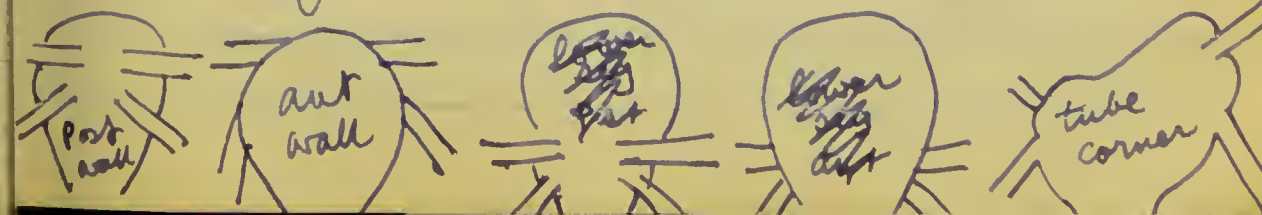
or Peritinal area

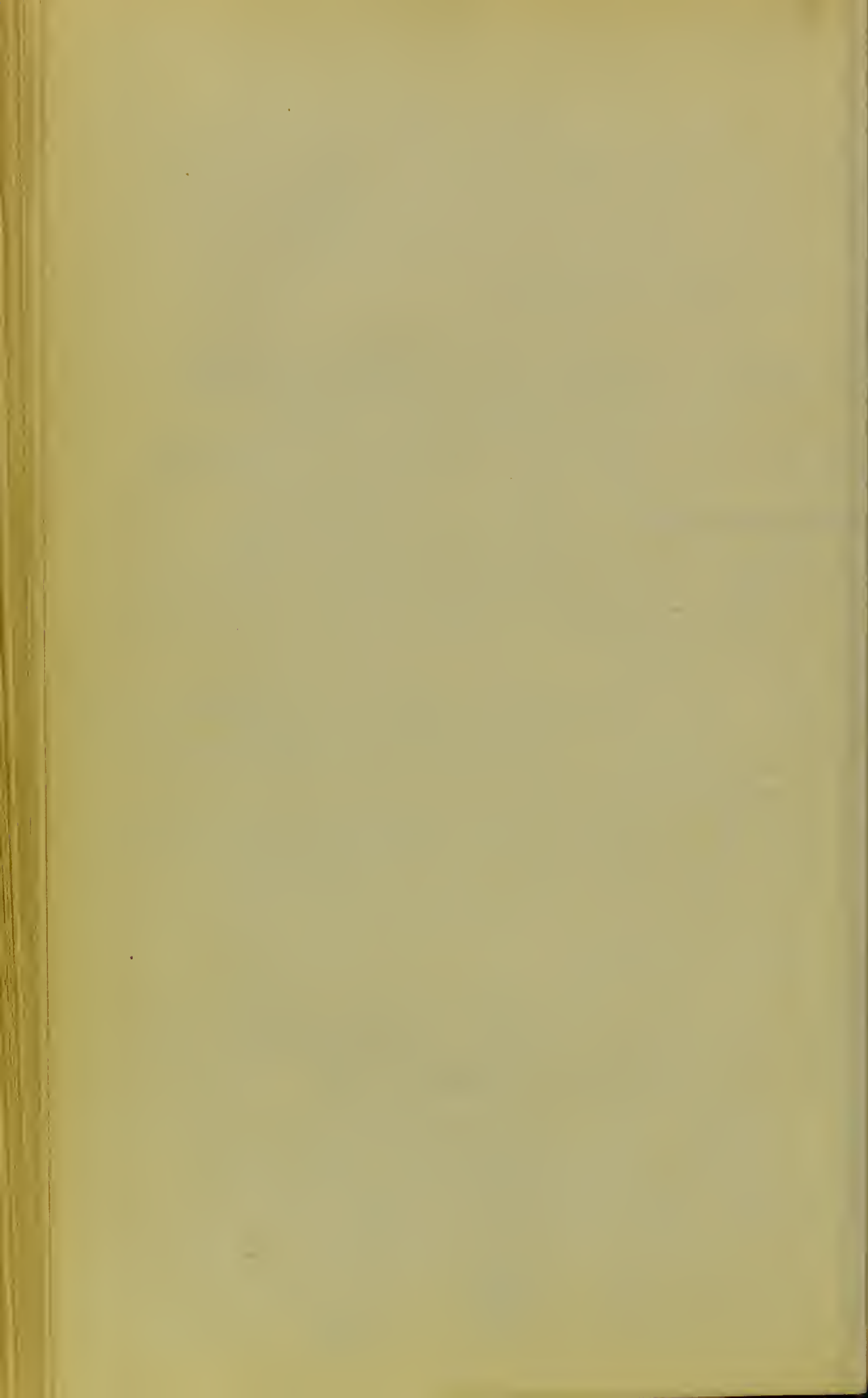
ant + Post walls ~~most frequent~~ - The uterine wall is thickest there + the villi have a better "soil" there.

May be implanted abnormally.

1. Fundal - (tendency afterwards to inversion)
2. Tube corners (circumvallate placenta + haemorrhage)
3. In lower segment (placenta praevia)

The position of the placenta (when it develops) alters the relation of tubes + round ligaments in each particular kind of site of placenta





The Placenta may be in fallopian tube.

The Placenta abnormally may be divided into two, three, or multiple or one portion may not be developed or may be atrophied.

Placenta may be abnormally large, sometimes nearly like a "diffuse placenta". It is then thin.

The Placental blood contains more Urea (nearly double) than in rest of body.

Foetal Blood

Contains more serum + less fibrin than the maternal blood. The corpus are larger + more numerous - Erythrocytes less numerous - Darker colour + less arterial than Mother. Bile is paler than Mother. In intestinal canal you find

A. Peculiarities of Structure of Fœtus
B. Peculiarities of Function of Fœtus
1. Circulation:

2. THE NUTRITION OF THE FŒTUS—

(1) In the earlier periods :

(2) In the later months.

Rate of growth of fœtus.

Conditions modifying size of full-time fœtus.

3. RESPIRATION—

Necessity of intra-uterine oxygenation.

How effected in early, and in later months.

4. SECRETIONS—

Hepatic and Pancreatic.

Intestinal.

Renal.

Cutaneous.

5. FUNCTIONS OF ANIMAL LIFE.

The meconium which accumulates from 6th month onwards. Consists of epithelial cells, hair fibrils, bile etc etc.

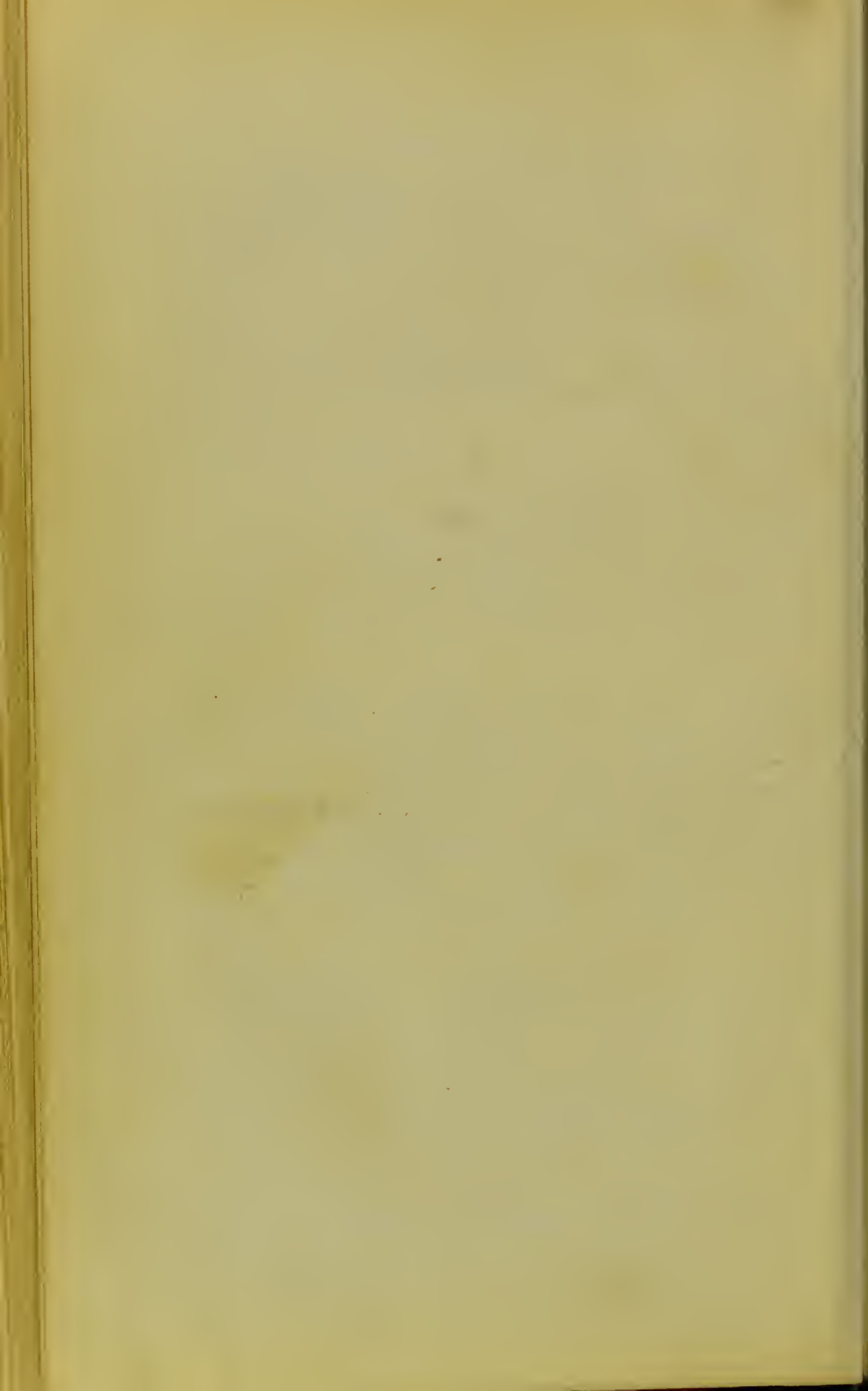
The Liquor Amnii
Source -

Vernix Caseosa
A cheesy deposit covering skin of newly born foetus.

Ductus Venosus, Ductus Arteriosus, Foramen Ovale, Eustachian Valve, Papillary membrane, Wolffian bodies - Are all peculiar to the foetus.

Skull is large, lungs compressed, liver large, pelvis small, Thyroid, Thymus are both large

Foetus has many more bones than adult - i.e. innominate in foetus is in 6. 2 ill 2 isch 2 pub.



The right side of the heart is as powerfully developed as the left.

Read Foetal Circulation

from the 6th month onwards the Foramen ovale begins to close -

Foetal heart sound shows

1. That there is a living child there for certain
2. The vigor shows the strength etc of the child.

Use of stethoscope is useful in Placenta Previa -

XIII A.

Liquor Amnii—Proportion of Albumen and Mucin.

(VOGT UND SCHEREN).

At 4th month	=	10·77	per cent.
5th „	=	7·67	„
6th „	=	6·67	„
Up to end of pregnancy	=	0·82	„

Proportion of Albumen, according to Anderson.

At 4th week	=	$\frac{1}{2}$ -1	per cent.
6th „	=	1-1 $\frac{1}{2}$	„
8th „	=	1-2	„
3rd month	=	2-3	„
4th „	=	2 $\frac{1}{2}$ -4	„
5th „	=	3-5	„
6th „	=	3-6	„
7th „	=	2-4	„
8th „	=	2-3	„
9th „	=	$\frac{1}{2}$ -1	„

XIII.

Analysis of Liquor Amnii.

	FÆTUS OF 3 MONTHS.	FÆTUS OF 6 MONTHS.
Water	979·45	990·03
Alcoholic Extract composed of Animal Substance and Lactate of Soda . . .	3·69	0·33
Chloride of Sodium . . .	5·95	2·40
Albumen	10·77	6·67
Sulphate and Phosphate of Lime	0·14	0·30
	1000·00	1000·00

XIV.

Composition of Liquor Amnii and Milk.

	LIQUOR AMNII.	MILK.
Water	983.4	Water . . . 886
Albumen	5.9	Casein and Solu- ble Salts . 39
Albumenate and Chlor- ide of Sodium . .	6.1	Butter . . . 26
Extractive Matter .	4.6	Sugar of Milk and Soluble Salts . . . 49
	1000.0	1000

(By Vauquelin).

XV.

Length and Weight of Fœtus.

	LENGTH.	WEIGHT.
1st Month .	$\frac{1}{2}$ inch.	
2nd „ .	1 - $1\frac{1}{4}$ „	1 dr.
3rd „ .	3 - $3\frac{1}{2}$ „	$1\frac{1}{2}$ oz.
4th „ .	4 - $6\frac{1}{2}$ „	$3\frac{1}{2}$ oz.
5th „ .	7 - $10\frac{1}{2}$ „	9 oz.
6th „ .	11 - $13\frac{1}{2}$ „	$2\frac{1}{2}$ lbs.
7th „ .	$13\frac{1}{2}$ - $15\frac{1}{2}$ „	$4\frac{1}{2}$ „
8th „ .	$15\frac{1}{2}$ - $16\frac{1}{2}$ „	$5\frac{1}{2}$ „
9th „ .	$16\frac{1}{2}$ - $17\frac{1}{2}$ „	$6\frac{1}{2}$ „
10th „ .	$17\frac{1}{2}$ - $18\frac{1}{2}$ „	$7\frac{1}{2}$ „

In the 3rd and 4th months fœtus measures—

3 and 4 inches respectively.

„ 5, 6, 7, and 8 „	10, 12, 14, and 16 „ „
„ 9 „	17 „ „
„ 10 „	18 „ „

This table is according to the Menstrual Period, viz. four weeks to the month.

(By Schröder.)

Comparative Weights of Adult, Infant, and Fœtus.

	MAN AT 30.	NEW BORN		FŒTUS AT 6 MONTHS.
		BOY.	GIRL.	
Weight of the whole in grammes. . .	69668	2400	2369	643
Pereent. proportion of Skeleton . . .	15·9	17·7	15·7	20·3
Do. Museles . . .	41·8	22·9	23·9	22·3
Do. Thoracic Viscera	1·7	3·0	...	...
Do. Abdominal „	7·2	11·5	...	...
Do. Fat	18·2	...	13·5	...
Do. Skin	6·9	20·0	11·3	14·8
Do. Brain	1·9	15·8	12·2	18·0

XVII.

Degree of Growth of Fœtus.

1st Month.—Ovum size of pigeon's egg. U. vesicle continuous with gut. Amnion closed.

2nd Month.—Immense changes. Size of hen's egg; permanent form. Extremities with three divisions. Umbilical cord forming. Still containing bowel.

3rd Month.—Size of goose egg. Bowels retracted from navel. Ossification in most bones. Nails on fingers and toes. External genitals begun to differentiate.

4th Month.—Sex recognisable.

5th Month.—Skin less transparent. Hair on head appearing. Lanugo over whole body.

6th Month.—Fat getting deposited beneath skin. Head disproportionately large. Wide sutures and fontanelles. If born, soon dies.

7th Month.—Eyelids separated. If born, moves. Cries very weak.

8th Month.—Pupillary membrane disappears. Skin still red. Easily dies.

9th Month.—Greater mortality than ripe fœtus.

10th Month.—Lanugo gradually lost. Still visible on shoulders. Nails not to finger-tips. At end of month has all the peculiarities of ripe fœtus.

XVIIA.

Length and Weight of Fœtus at different Months.

MONTH.	NO. OF CASES.	MEAN WT. IN GRAMMES.	MAXIMAL AND MINIMAL LENGTHS IN CM'S.
3rd	18	11	7 to 9
4th	51	55	10 to 17
5th	76	273	18 to 27
6th	51	676	28 to 34
7th	52	1170	35 to 38
8th	64	1571	39 to 41
9th	81	1942	42 to 44
10th	93	2323	46

HASSE'S SCHEME OF LENGTH OF FŒTUS.

End of	1st month	$1 \times 1 = 1$ Cm.
„	2nd „	$2 \times 2 = 4$ „
„	3rd „	$3 \times 3 = 9$ „
„	4th „	$4 \times 4 = 16$ „
„	5th „	$5 \times 5 = 25$ „
„	6th „	$6 \times 5 = 30$ „
„	7th „	$7 \times 5 = 35$ „
„	8th „	$8 \times 5 = 40$ „
„	9th „	$9 \times 5 = 45$ „
„	10th „	$10 \times 5 = 50$ „

Figures too large for early months but good for last half.

Table of Relative Number of Cases in which the
Presentation was found.

REPORTER.	TOTAL NUMBER OF CASES.	CEPHALIC.	PELVIC.	TRANSVERSE.
La Chapelle	37,126	... 35,550 ...	1390	... 186
Boivin	20,517	... 19,810 ...	611	... 96
Clarke	10,387	... 10,094 ...	245	... 48
Collins	16,654	... 16,102 ...	504	... 48
Total	84,684	... 81,556 ...	2750	... 378
or				
Proportion 96 in 100 ... 1 in 31 ... 1 in 224				

Normal

Head 96 in 100

Pelvic 1 in 31

Transverse 1 in 224

XXII.

Causes of Malpresentations.

1. PREMATURITY OF PARTURITION—

Table of presentations of the Fœtus in 1807, premature labours supervening spontaneously or induced artificially.

	HEAD.	PELVIC.	TRANSVERSE.
Proportion among premature labours	70 in 100.	1 in 4	1 in 23.
Proportion among common labours at full time	96 in 100.	1 in 31.	1 in 224.

2. DEATH OF THE CHILD IN UTERO—

Presentation of Fœtus in 669 cases in which child had died *in utero*.

	HEAD.	PELVIC.	TRANSVERSE.
Proportion among putrid children	82 in 100.	1 in 6.	1 in 55.
Proportion in common labours at full time	96 in 100.	1 in 31.	1 in 224.

3. INTRA-UTERINE DISEASE ALTERING ITS FORM—

Table of proportions of different presentations in 69 cases of intra-uterine hydrocephalus and 84,000 cases of common labour.

	HEAD.	PELVIC.	TRANSVERSE.
Hydrocephalus Cases	59 in 69.	1 in 7.	1 in 69.
Common Cases	96 in 100.	1 in 31.	1 in 224.

4. MALFORMATIONS AND MONSTROSITIES ALTERING ITS FORM.

[OVER.

PLURAL CONCEPTIONS.

VARIETIES.

FREQUENCY. *Twins 1 in 100 - Triplets 1 in 10,000 - Quad 1 in millions*

CAUSES OF TWIN-CONCEPTIONS.

RELATIONS OF MEMBRANES.

PROPORTION AND RELATION OF SEXES.

DEGREE OF DEVELOPMENT.

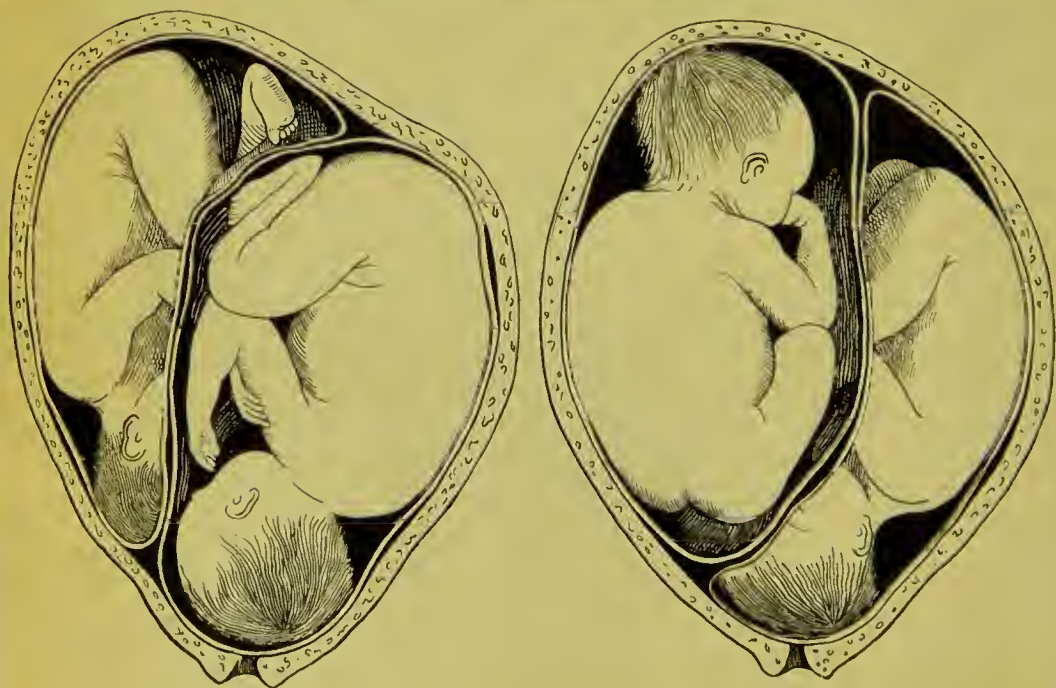
SUPER-FECUNDATION AND -FETATION.

DIAGNOSIS OF TWIN CASES.

TRIPLETS.

*Two or a separately
fertilised at different coitus
periods.*

*Two ova separately
fertilised & shed
at different menstrual
periods - by different coitus*



Plural Conceptions

6 is the limit.

- 1. 17 plural conceptions
- 2. 83 ordinary conceptions

1) Fertilization of two separate ova. These ova may come from different ovaries - or two ovisacs burst in ~~same~~ same ovary - or two ova in one ovisac - In each case Binovular twins is the result

Fertilization of but one ovum - ~~gives~~ gives us Uniovular twins -
i. Maybe two yolk sacs
ii. Two germinal areas on one yolk sac
iii. One germinal area dividing into two parts.

The study of the membranes after birth tell us if the twins be Binovular or Uniovular -
8 or 6 to 1

In Uniovular twins the sex is always the same i.e. either two males or two females -

XXIV.

Proportion of Transverse Presentations in
6 Conditions.

CONDITIONS.	NO. OF CASES.	TRANS- VERSE.	PROPOR- TION.
Cæsarean section . .	44	5	1 in 9
Placenta prævia . .	366	17	1 in 21
Premature labour . .	1087	46	1 in 23
Twin pregnancy . .	1615	33	1 in 49
Death of child . .	669	12	1 in 55
Hydrocephalus . .	69	1	1 in 69
Common practice . .	84,684	387	1 in 224

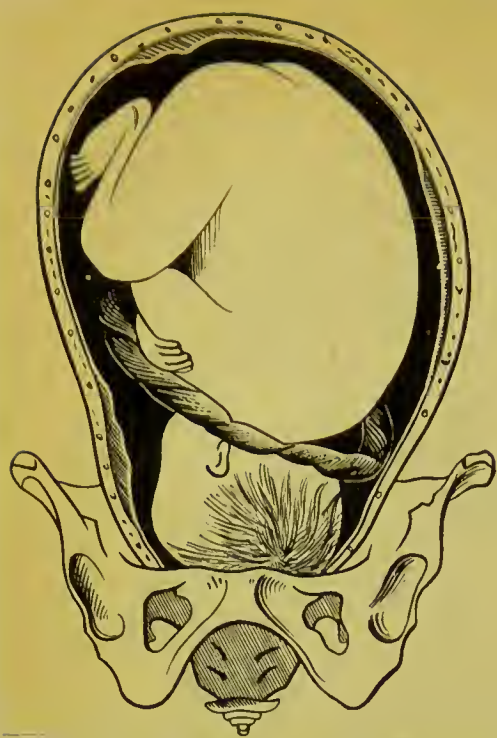
XXIII.

Proportion of Malpresentations in Six specified Conditions.

CONDITIONS.	No. OF CASES.	No. OF MAL- PRESENTA- TIONS.	PROPOR- TION.
Premature labour . . .	1087	325	1 in 3
Cæsarean section . . .	44	14	1 in 3
Twin pregnancy . . .	1615	531	1 in 5
Death of child . . .	669	116	1 in 6
Hydrocephalus . . .	69	11	1 in 6
Placenta prævia . . .	366	56	1 in 7
Common practice . . .	84,684	1053	1 in 27

Proportion of Pelvic Presentations under Six specified Causes.

CONDITIONS.	No. OF CASES.	PELVIC.	PROPOR- TION.
Twin pregnancy . . .	1615	498	1 in 3
Premature labour . . .	1087	274	1 in 4
Cæsarean section . . .	44	9	1 in 5
Death of child . . .	669	104	1 in 6
Hydrocephalus . . .	69	10	1 in 7
Placenta prævia . . .	366	39	1 in 9
Common practice . . .	84,684	2750	1 in 31



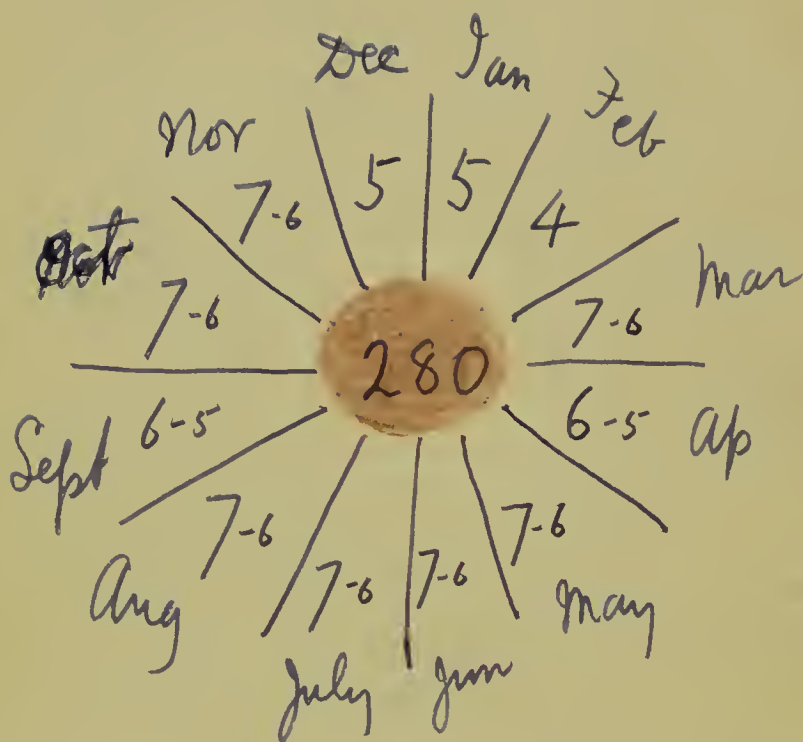












NATURAL PERIOD OF HUMAN GESTATION.

DURATION—Variations.

DATA OF CALCULATION.

DEGREES OF SHORTENED GESTATION.

ABORTION AND PREMATURE LABOUR.

THEIR DISTINCTION.

LEGAL AND MEDICAL DEFINITION.

Natural Period of Gestation
usually 9 months or 40 weeks
or 280 days.

Ascertain date of impregnation
when conception is due to
one coitus.

Patient sometimes states she
knows when conception
takes place during coition.

Suppression of Menses
is the only practical guide.

The connection between ovulation
+ menstruation

Glycerine injected into the ovary
of bitch produces in a day or
two a change takes place
in the uterus.

The spermatozoa reaches the
uterus in $1\frac{1}{2}$ hrs after
insemination.

- The first week after Menstruation
fertilization usually occurs -
- second not so frequent
- third not so frequent

XXV.

Period of Forty Deliveries in the Human Mothers,
Impregnation being calculated from a single
coitus.

WEEKS.	DAYS.	TOTAL OF CASES.	
38	260-266	5	= 12½ per cent.
39	267-273	7	= 17½ „
40	274-280	18	= 45 „
41	281-287	6	= 15 „
42	288-294	4	= 10 „

XXVI.

Date of Conception (Ahlfeld).

<i>after menses</i>	1st to 5th day	.	.	62	=	28.3	per cent.
"	6th „ 10th „	.	.	75	=	34.2	„
"	11th „ 15th „	.	.	45	=	20.5	„
"	16th „ 20th „	.	.	22	=	10.0	„
"	21st „ 25th „	.	.	9	=	4.0	„
"	26th „ 30th „	.	.	5	=	2.2	„
"	After 30th „	.	.	1	=	0.45	„

XXVII.

Duration of Pregnancy in 653 Women.

32nd week	.	.	1 Case	=	0.15	per cent.
33rd „	.	.	1 „	=	0.15	„
34th „	.	.	7 Cases	=	1.077	„
35th „	.	.	11 „	=	1.68	„
36th „	.	.	26 „	=	3.98	„
37th „	.	.	48 „	=	7.35	„
38th „	.	.	104 „	=	15.93	„
40th „	.	.	170 „	=	26.19	„
41st „	.	.	66 „	=	10.1	„
42nd „	.	.	20 „	=	3.07	„
43rd „	.	.	7 „	=	1.07	„
After the 300th day	.	.	13 „	=	1.99	„

forth week very rarely indeed
The menstrual Type rules
the time when conception is
most likely to occur -
28 day type 88% in 1st week
21 " " 35% " " "
irregularity " 24% " " "

Patient may have menstrual
flow Once or more after
conception -
Menstruation may be very
irregular indeed + put one
off.

nine calendar months + one
week is the usual time
allowed.

The length of the
pregnancy corresponds with
the menstrual type - The
shorter the intermenstrual time
the shorter the gestation -

XXVIII.

Table showing the period of pregnancy at which the Abortion occurred in 602 cases, the relative amount of Still-born and Living children, and the number living at a month after birth.

Period of Pregnancy at which Abortion occurred.	No. of Births at each Period.	Number Still-born.	Number Living at Birth.	Number Living at the end of a Month after Birth.
2 months.	35	—	—	—
3 "	275	—	—	—
4 "	147	—	—	—
5 "	30	—	—	—
6 "	32	24	8	—
7 "	55	38	17	3
8 "	28	23	5	1
	602	85	30	4

XXIX.

Mortality from various causes in Male and Female Births. Dublin Hospital—Dr Collins.

	NO. OF MALES.	NO. OF FEMALES.
	8303	7833
Still births	357 or 1 in 23	237 or 1 in 33
Deaths, Children in Hospital	106 „ 1 „	78 „ 1 „ 120
Of women	106 „ 1 „	79 „ 1 „ 159
Puerperal fever	54 „ 1 „ 153	34 „ 1 „ 220
Tedious labour	65 „ 1 „ 127	44 „ 1 „ 187
Crotchet cases	50 „ 1 „ 166	24 „ 1 „ 326
Forceps	16 „ 1 „ 519	8 „ 1 „ 979
Convulsions	17 „ 1 „ 488	11 „ 1 „ 712
Rupture of uterus	23 „ 1 „ 361	11 „ 1 „ 712
Post-partum } Hæmorrhage }	31 „ 1 „ 268	13 „ 1 „ 602

Quickening often first calls a woman's attention to the fact that she is preg.

fallacies:

1. Pseudo-quickening as in Queen Mary ~~Queen~~
2. Pregnancy without quickening.
3. Variation in date of quickening. Some women perceive the movements much earlier than others - Normally at mid-term of preg: i.e. $4\frac{1}{2}$ months.

Physical examination -

Note size of abdominal tumour - 6th month at Umbilicus - 7th month hand breath above it - 8th month at sternum - 9th month lower again -

The length of the foetus in utero may be measured with calipers - the length of foetus doubled up $\times 2$ gives length of extended foetus -

XXX.

The shorter the labour the less is the danger both to Mother and Child, as seen in the following table by Dr Collins.

Number of Labours over in	24 hours	.	.	15.586
„	„	more than 24	„	264

DURATION OF LABOUR.	MATERNAL MORTALITY.	INFANTILE MORTALITY.
Within 24 hours .	105 or 1 in 148 ...	412 or 1 in 35
Beyond „ „ .	31 „ 1 „ 8 ...	114 „ 1 „ 2½

DURATION.	NO. OF LABOURS.	MOTHER'S DEATH IN PROPORTION.	CHILDREN'S DEATHS IN PROPORTION.
1 hour.	3537	11 or 1 in 322	
2 hours.	3513	11 „ 1 „ 319	1 in 43
3 „	2487	15 „ 1 „ 166	1 „ 39
4-6 „	3875	29 „ 1 „ 134	1 „ 18
7-12 „	1672	21 „ 1 „ 80	1 „ 8
13-24 „	502	19 „ 1 „ 26	1 „ 6
25-36 „	134	8 „ 1 „ 17	1 „ 3
37-48 „	79	13 „ 1 „ 6	1 „ 2
49-60 „	32	6 „ 1 „ 5	1 „ 3
61-96 „	19	5 „ 1 „ 4	1 „ 5

examine p.v. + notice the change
in cervix uteræ - ^{Duncan} | ^{Clark} | ^{Arnold}
variation of mean time 278 - 279 - 280-4

- protracted gestation the question
of parentage may arise - as it
may arise in premature gestation -

- extra uterine gestation the
ovum may remain there for
years + years -

animals	Elephant	625 days
Giraffe	444 days	Mare 335 "
cow	280 "	Sheep 151 "
cow	115 "	Bitch 60 "
Cat	56 "	Rat 31 "

all these animals have very
considerable differences in
the period of gestation - The
Mare varying 129 days -

the same women will often
have differences in the periods
of their gestations - even
20-40 days - + sometimes
above 111 days

XXXI.

Proportion of Complications in First and Subsequent Labours.

FIRST LABOUR, 4987.			SUBSEQUENT LABOURS, 11,427.	
Still-born children .	260 or 1 in	19	534 or 1 in	34
Death of infant ten days after birth .	75 „ 1 „	66	94 „ 1 „	120
Maternal death .	86 „ 1 „	53	78 „ 1 „	146
Puerperal fever .	44 „ 1 „	113	44 „ 1 „	259
Tedious labour .	75 „ 1 „	66	34 „ 1 „	366
Crotchet cases .	51 „ 1 „	97	24 „ 1 „	467
Forceps .	18 „ 1 „	277	6 „ 1 „	1,904
Convulsions .	29 „ 1 „	174	1 „ 1 „	11,427

XXXII.

Table showing relative mortality during Child-bed among the labouring classes and others.

LOCALITY.	TOTAL DEATH-RATE.	DEATHS IN CHILD-BED
Hulme { Labouring Classes. }	11,001	56 or 1 in 196½
Moss-side, { Wealthier Broughton. { Classes. }	2,778	36 or 1 in 84

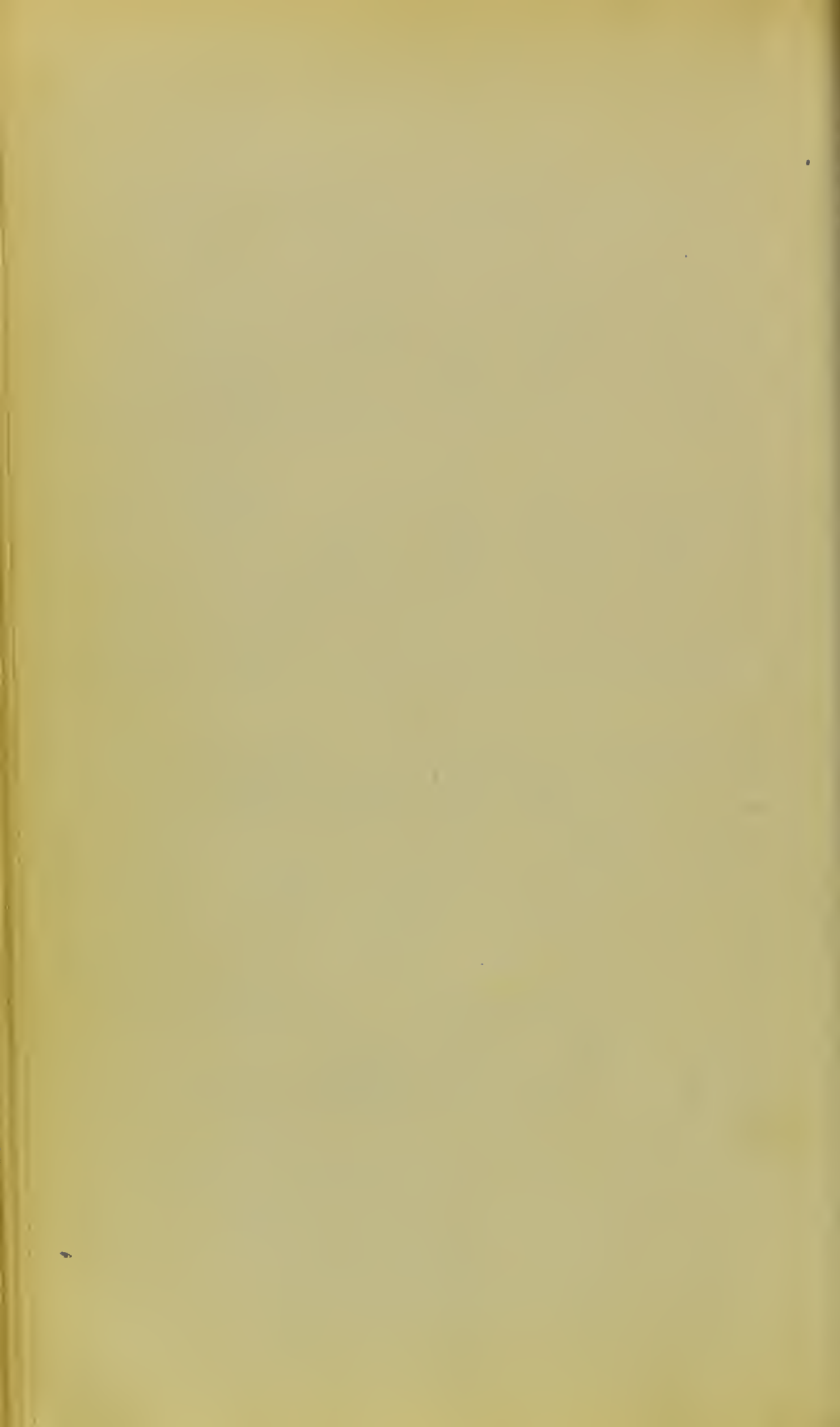
menstrual tide is influential
in determining the period of gestation.
Thus 280 days is the commonest
case 28 days is the common
menstrual month. ∴ period
will be 10 menstrual months.

Variations of course there must
be in the time the sperm reaches
the ovum + in the time when
the ovum reaches the uterus.

The sex of the child is sometimes said
to influence the period but this is
very doubtful. The longer ~~the~~
gestation resulting in male
offspring as a rule. The truth
is that the larger child is
carried the longer.

The age of the mother influences
the period

		days
15-20 yrs		275.3 gestation
21 25		278.6
26 30		280.
31 35		280.25
36 40		275.
41 -		274.6



Primiparae have shorter gestations.

1 st	276.78 days	1 st Preg
2 nd	278.9	2 "
3 rd	281.3	3 "
4 th	278.1	4 "
5 th	276.9	5 "

Social condition

Married	longer	282.7
Unmarried		278.2

~~Maternal~~
constitution

Strong	278.6
Delicate	276.8

Complexion

Blondes	280.4
Brunettes	276.7

Time

Oct - Mar	279.5
April - Sept	277.2

Fertilization in 1st week of Menses 277.3

2 nd	=	278.9
3 rd	=	287.5
4 th	=	284.6

DEGREES OF PROTRACTED GESTATION.

LEGAL AND MEDICAL VIEWS.

PROBABLE CAUSES OF VARIATION.

EXCITING CAUSES OF PARTURITION.

1. ON PART OF THE FŒTUS AND ITS APPENDAGES.
2. ON PART OF THE UTERUS.

Detachment of the Decidua.

Accidental or Artificial Exciting of Labour.

Exciting Causes of Parturition

1. On Part of Foetus + its Appendages.

{ The foetus experiences the need of respiration, wants to pass faeces etc - any way all the organs have become fully developed.

Some say foetus presses on the inital nerves supposed to exist at lower part of uterus

Some say that a conflict between the muscular fibres in the wall of the uterus + the fibres in the sphincter that keeps the uterus closed + gradually the sphincter was overcome.

Some say the accumulation of CO_2 in the blood of the uterus stimulates the uterus into activity.

Some say ~~the~~ thrombosis in the placental veins begins to irritate the uterus.

Some say the ovaries are the

Sir. J. Simpson

seat of the influence starting Parturition. But the ovaries have been removed in pregnant women & the foetus has been carried to full term -

2. On the Part of the Uterus -
The muscular fibres at the last do not go ~~on~~ on growing & the further expansion is merely passive - The decidua eventually becomes an effete structure - This degeneration causes the membrane to be loosely attached to the uterine walls and thus acting as a foreign body causes the uterus to contract

Abortion may be accidental or artificial -

SPURIOUS PREGNANCY—PSEUDO-CYESIS.

TIME OF OCCURRENCE. *Towards menopause. newly married + unmarried.*

VARIETIES. *c or c ont disease of organs.*

PATHOLOGY.

SYMPTOMS and PHYSICAL SIGNS.

DIFFERENTIAL DIAGNOSIS.

PROGNOSIS.

TREATMENT.

Pseudo-cyesis

May occur especially towards the menopause - & in newly married women & in the unmarried - But may occur at any time of generative life -

Varieties local symptoms may be present or absent -

Chronic inflammatory processes may be present in uterus, tubes, or ovaries -

Symptoms are the ordinary symptoms of pregnancy -

Amenorrhoea ~~not~~ may not always be present - Gastric disturbance & morning sickness - Mammary changes occur, tenderness fullness & in oldish ~~men~~ ~~women~~ women even milk formation - Striæ is even felt by the woman - Enlargement of abdomen - Tendency to kick sometimes salivatory habit, itching habit, changes in temper

eruptions, convulsive habits etc
or any phenomena that may have occurred in
previous pregnancies.
When patient comes to you ask
the order of the symptoms. Often
you will find the storage before
the amenorrhoea - or swelling
of abdomen too early etc
etc ad lib - or storage
may ~~be~~ be different from the
true movements of foetus in utero
or breasts began to swell but
did not go on etc etc ad lib

Make a careful Physical Examination

The umbilicus instead
of being projected is depressed.
No discolouration of it -
No linea ~~alba~~ nigra -
The striae if present are
all old & none fresh -
The swelling of the abdomen
is not broader above &
narrower below but is more
rounded, & the abdominal
muscles form a kind of

furrow where they join the ribs.
or Percussion a resonant note
is got - May be dull if
much fat deposit - But
usually much tympanites.
Auscultation gives no vascular
sound of uterine vessels +
no tick tack of the foetal
heart -

Palpation abdominal muscles are
unusually & continuously
tense - Get patient to count
up to 40 without taking breath
etc etc make her talk + distract her

P V shews no softening of the m m
no pulsation of the vaginal
arteries - Lips of os are
not softened + are often
~~found~~ firm + indurated -
Inspection no discolouration

Bimanual Helps very largely

In some cases you can only
clear it up by giving
Chloroform - Then the abdominal

muscles become relaxed + the tumour disappears - or if not you may diagnose a pathological condition.

It is often difficult to persuade the patient of her real condition.

Sometimes the symptoms pass off early (i.e. abort)

Sometimes runs all the 9 months + symptoms subside

Sometimes run longer + then disappear

Sometimes the patient have such a strong impression of pregnancy that you require the evidence of a bystander to prove that the tumour disappears under chloroform.

Some imagine it is a serpent or beast insides. Some

women can make movements, like foetal movements, ~~to~~ in their abdominal ~~on~~ muscles

Sometimes symptoms go on years + years

Treat

Look to general health

KBr or KI are good

Look to any inflammatory condition that may be present -

or give "hysterical remedies" -

Counter irritants are sometimes good -

Pil Galbanum Co

Nux Vom gr $\frac{1}{2}$

is exceptionally good -

PATHOLOGY OF PREGNANCY.

1. NERVOUS SYSTEM AND BRAIN—

Insanity, Paralysis,

Epilepsy, Chorea,

Convulsions and other Affections.

insomnia. despondency.
Headache - Pain in breasts. Intercostal pain. Deafness.

2. THE BLOOD AND VASCULAR SYSTEM—

Exaggeration of Normal changes,

Affections of Thyroid and Spleen,

Cardiac Affections,

Varix.

3. RESPIRATORY SYSTEM—

Dyspnœa,

Cough,

Hæmoptysis,

Influence of Phthisis and Pneumonia.

4. DIGESTIVE AND EXCRETORY SYSTEM—

A. Gastro-Intestinal Canal—

Disordered Appetite, Salivation,

Nausea and Vomiting,

Causes, Treatment ;

Heartburn,

Diarrhœa,

Constipation.

B. Liver—

Acute Yellow Atrophy.

C. Urinary Organs—

Incontinence, Retention, Albuminuria.

Polyuria Glycosuria
Nephritis Calculus -

In young & paræ -
Causes - Heart disease
Preexisting Nephritis
Independent nephritis -
In x faras carinii

The Pathology of Pregnancy

The strain of pregnancy is a very severe test of the health of the patient - Patients are therefore very liable to disease in pregnancy -

Insanity

especially seen if there is any hereditary insanity & especially in puerperal conditions. In preg the form commonest is melancholy, dread etc -

Paralysis

Paralytic women previously but also the paralysis may set in during pregnancy - Hemiplegia;

Epilepsy

sometimes pre-existed -
treat by careful dieting - tonics - Br especially KBr - sometimes do -

Chorea

is usually bilateral & movements

5. EFFECT OF EPIDEMICS—

Influenza, Cholera,

Typhoid, Typhus and Relapsing Fever,

Small-pox.

Consequences to mother and foetus.

6. RHEUMATISM.

7. SYPHILIS.

Modes of Infection,

Influence on Foetus,

Treatment.

8. DISEASES OF THE GENERATIVE ORGANS—

Pruritus : Oedema :

Leucorrhœa : Hydrorrhœa :

Inflammation ;

Endometritis,

Polypoidal and diffuse forms,

Mesometritis,

Perimetritis :

Fibroid Tumours :

Carcinoma :

Displacements of Uterus—

Prolapsus,

complete and partial,

Anteversion.

Retroflexion of the Gravid Uterus—

Causes, Exertion. overloaded bowels.

Degrees,

Symptoms,

Diagnosis,

Prognosis,

Treatment,

Preliminaries,

Reposition by posture, hands, or instruments.

Evacuation of Uterus.

Hernia of Gravid Uterus.

extremely violent - Keeping patient
sleepless etc etc - Abortion or
premature labour occurs in the
large proportion of cases -
There is often a family history
of Chorea -

There is often previous Chorea
Age from 15 - 40

most common 20 - 23

59% $\dot{\text{iparae}}$ 41% xparae
Shows itself commonly early
in pregnancy -

Treat K Br - As - Chloroform -
artificial feeding by mouth or
rectum - Production of
premature labour or abortion

5. Convulsions + Other Affections -

Convulsions associated with
disease of kidney - May merely
be hysterical in origin.

The urine will show this -

Sleeplessness during pregnancy
is common - but awkward in
puerperal condition + is
often the forerunner of mania etc

Pathology of Pregnancy.

DISEASES OF THE OVUM.

A. Of the fetal appendages.

1. THE CHORION —

Myxoma—hydatiform degeneration.

Pathology, Etiology, Symptoms.

Diagnosis, Prognosis, Treatment.

*Morning sickness. Abdominal
pains - Edema due to large size
of uterus. Haemorrhages. Ejection of
some of the vesicles.*

2. THE AMNION —

Defect of Liquor Amnii.

Causes, Consequences.

Excess of Liquor Amnii—

Hydramnios—Dropsy of Ovum.

Causes, Symptoms.

Diagnosis, Prognosis, Treatment.

*plug & tent. Ergot - or Curat
abs. - in usual at 3rd or 4th 5th months.*

*partial amputations, from
adhesions of membranes*

some general dropsy.

distress from large size of uterus

wear bandage - Tonics

3. THE PLACENTA —

Myxoma,

Cystic Growths, at root of umb. cord.

Apoplexies, usually in carverous portion.

Inflammation, Maternal. Fetal or both.

Calcareous degeneration.

4. THE UMBILICAL CORD —

Convolution, near, anore to the limb.

Knots, Torsion. Phlebitis etc.

B. Intra-uterine Diseases of Fetus.

Rickets, Struma, Syphilis,

Zymotic diseases, Cancer,

Tumours, Inflammation.

*forces effected
(melanotic)
Pericarditis
Peritonitis.*

See if you can remove the cause
of the insomnia. Exercise,
alter diet, drop tea or coffee
~~the~~ after dinner - etc ad lib.
Cocoa may be substituted -
or milk or milk + hot water -
or toddy (but dangerous to prescribe
for any women).

Sulphonal, Chloral, Opium,
etc can be given with due
precautions - + after all
other means have been
exhausted -

Despondence may be due
to gastric or hepatic disorders.
Headache may be due to

neuralgia requiring Iquime +
As but usually due to
gastric disturbances -

Pains in Breasts local sedative
plasters (Belladonna)

Intercostal Pains sedative
embrocations or
even injections of morphia -

~~Disturbance of Senses + diet~~

Disturbance of the Senses

Water in ordinary Blood 81%
" " Pregn: Blood 79%

Deafness, Blindness, etc
always look for albumin in
urine as eye symptoms are some the
first to appear in kidney disease

2. The Blood & Vascular System

In preg = the vessels being enlarged etc
more blood is wanted - The red
globules diminish in number -
formation of buffy coat (as in
active inflammation or Rheumatism).
Decrease of Fe - Increase
of white cells. Albumin
lessened. Fibrin increased -
Blood more watery - so diminished
density - $\frac{1}{2}$.

Perinicious Anaemia mostly occurs
between $\$ 24-36$ - who have born
too many preg's - 10 children
in nine years etc. Very apt
to prove fatal.

Haemophilia exaggerated by preg.
Should bleeders marry?

Thyroid enlargement common
in preg. In goitre districts preg
often starts a permanent
enlarged thyroid (Graves disease.)

all above

Sometimes developed in puerperium
Spleen enlarged sometimes in
preg. may go on to marked degree
this may disappear or persist after
labour - Leucothylæmia

{ Treat as in other patients but
watch carefully as they are
- apt to run a rapid course
Cardiac Affections

Some say heart is enlarged in preg.
It is quite probably.

If there is any ^{previous} cardiac inadequacy
the preg. putting a strain upon
it the weakness develops.

Mitral lesions commonest
Aortic not so common

The preg does not produce these
conditions but they have preexisted
or of course may be acquired
during pregnancy - There are
of greatest danger where the
lesion is recent -

Should heart disease marry?

Yuss -
~~about~~ 5th month breathlessness,
congestion of lungs, albuminuria.



is apt to be seen - It also adds to the risks of labour - In heart disease be careful to protect from all over exertion, good + easily digested diet, (not too nitrogenous) Look after urinary system - Wear flannel from neck to heels - Administer perhaps diuretics + diaphoretics - + Praps Strophanthus or Digitalis - The Preg: often ends prematurely - or in some cases should be procured -

The veins in pelvis + lower extremities are apt to be over distended in preg - Haemorrhoids + varix ~~in~~, especially varix in left leg - Patient should lie down as much as poss + put leg higher than trunk + wear bandage from leg right up thigh -



3. Respiratory System

Foetal tumour pressing on surrounding parts + causes dyspnoea -

Also sometimes due to connection of lungs (CO_2 in lungs) + menses. In preg, thus the CO_2 is much greater in amount because there is no menses -

Camphor, Valerian or Musk ~~to~~ may have to be given

Cough sometimes causes premature labour -

Haemoptysis may be Phthisical or not -

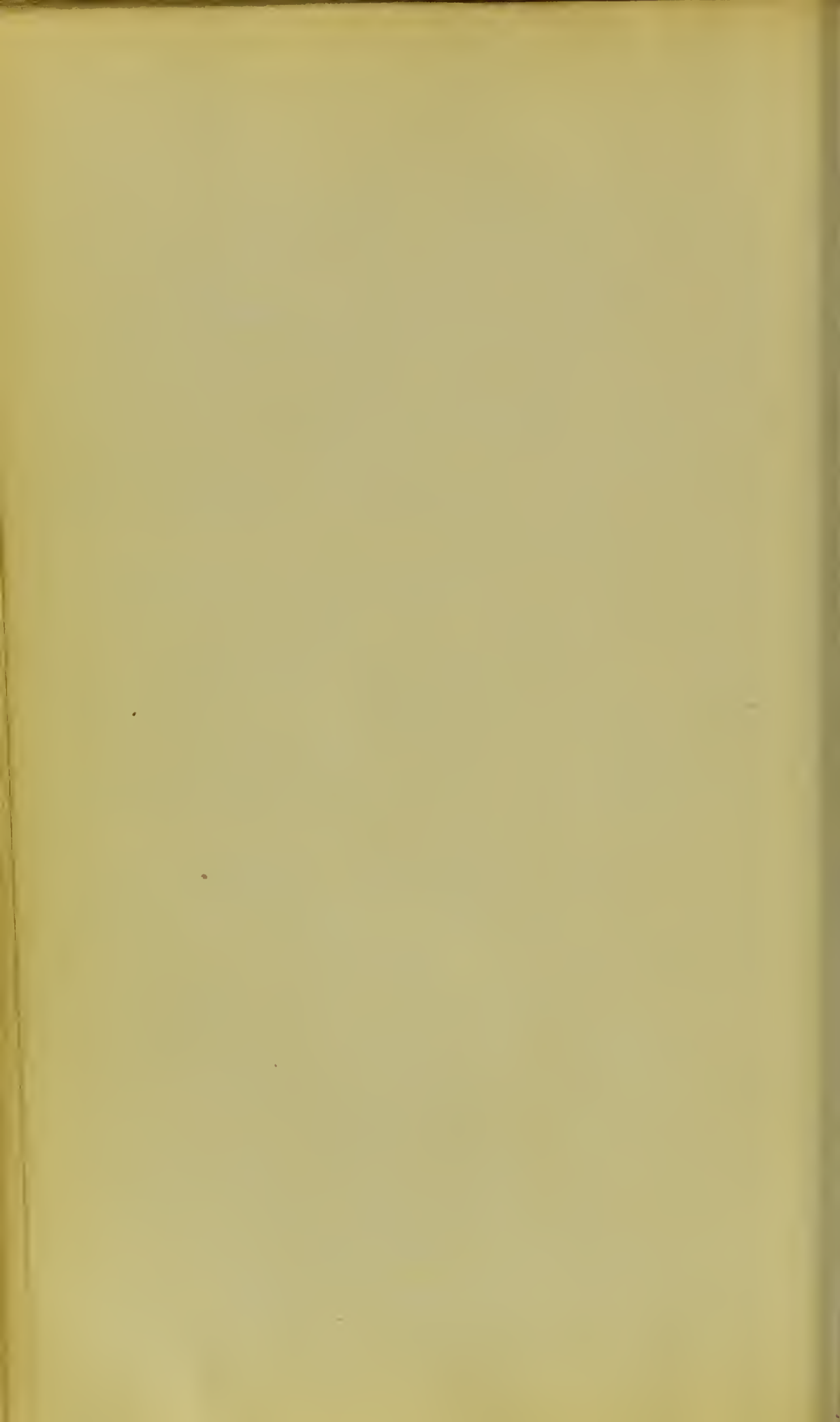
Some say Phthisis influences Preg: or rather preg prevents Phthisis from advancing -

This is entirely wrong -

Conception rarely occurs in tubercular women -

Puerperial condition seems to retard tubercular condition -

The tubercular mother may transmit the disease to the child in utero - [observed in the cow]



23%. Tubercular children dead born - In some tubercular cases the child is born quite healthy.

Pneumonia in preg. Woman very apt to abort or ~~miscarry~~ miscarry. Whether due to high T° or due to blood uncertain. Disease is more fatal than usually supposed. Foetus usually born dead.

Treat the Pneumonia as in any other case -



Ectopic Gestation

ECTOPIC (EXTRA-UTERINE) GESTATION.

PATHOLOGY.

VARIETIES :—

I. Ovarian ?

II. Tubal.

(a.) Infundibular,
Tubo-ovarian and Tubo-abdominal.

(b.) Ampullar.

(1.) Persistent,

(2.) Tubo-ligamentous or extra-peritoneal,
Subperitoneo-pelvic,
Subperitoneo-abdominal.

(3.) Tubo-peritoneal.

(c.) Interstitial.

III. Abdominal or Intra-peritoneal ?

SYMPTOMS.

DIAGNOSIS.

PROGNOSIS.

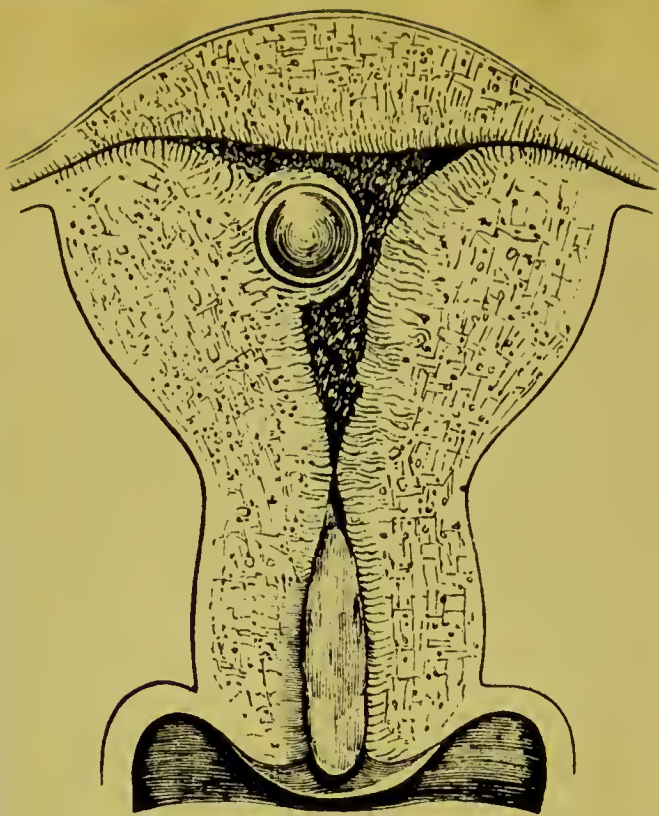
For mother—For child.

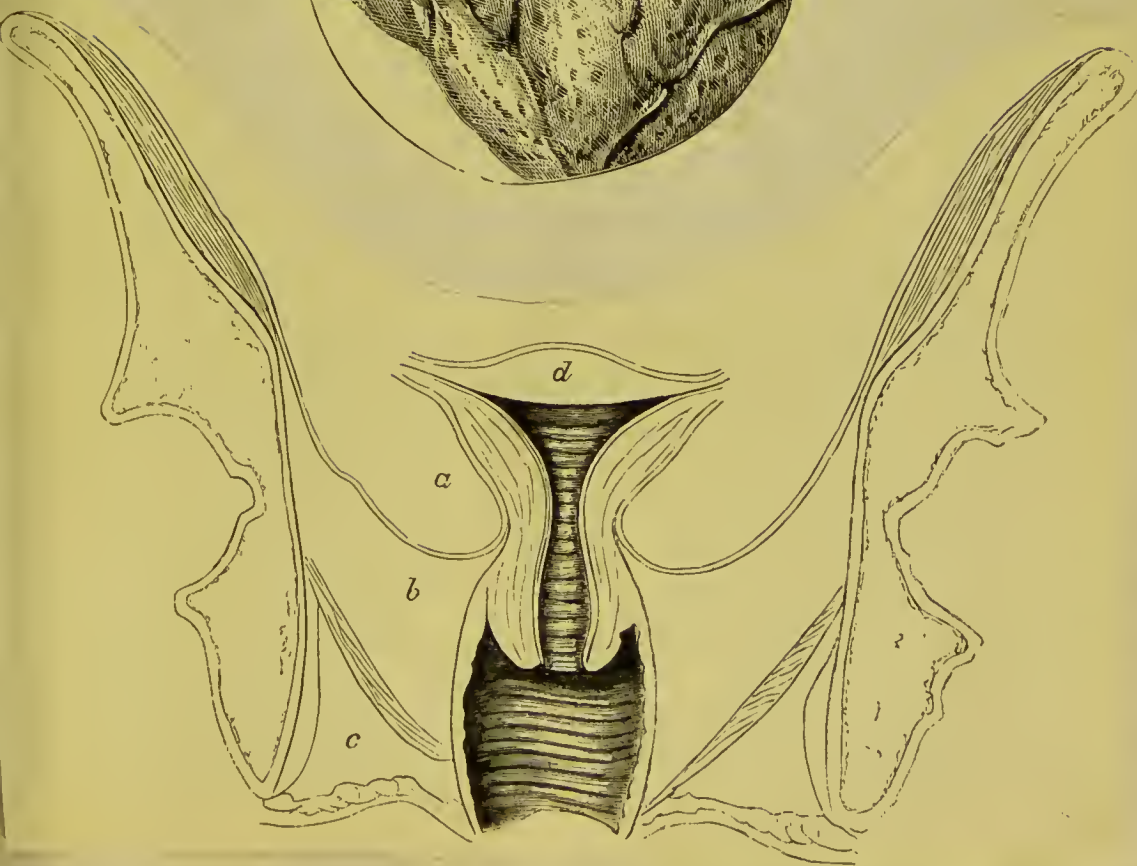
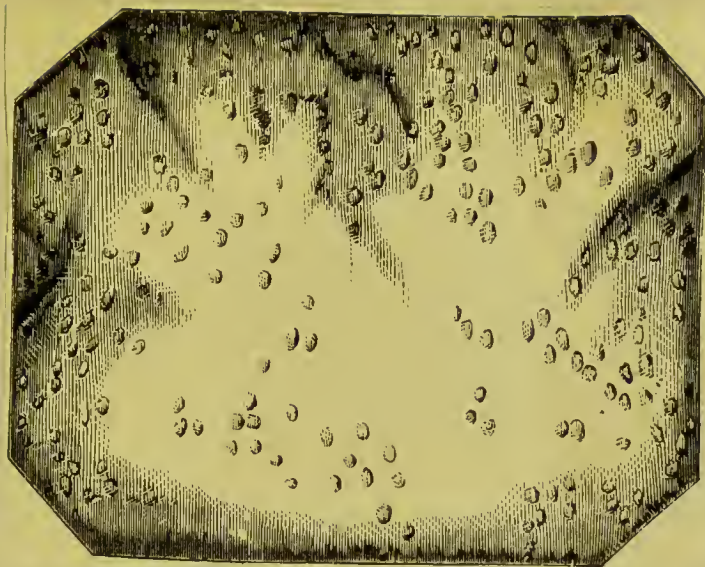
TREATMENT.

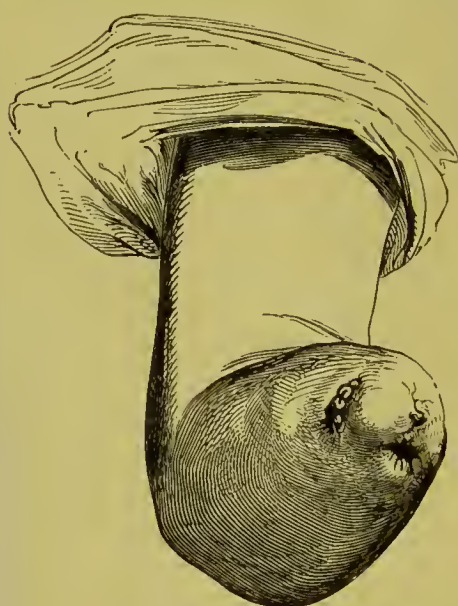
Prophylactic and Palliative.

Operative measures.

In early months—in later stages.







FACE PRESENTATIONS



LEFT MENTO-POSTERIOR — L.M.P.

FACE PRESENTATIONS



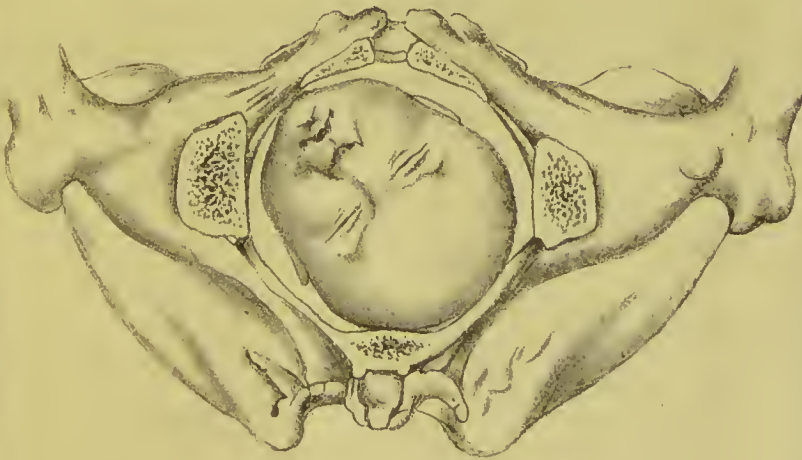
RIGHT MENTO-POSTERIOR—R.M.P.

FACE PRESENTATIONS



LEFT MENTO-ANTERIOR — L.M.A

FACE PRESENTATIONS



RIGHT MENTO-ANTERIOR R.M.A



this

this

Gynaecology

Pelvic Inflammation

1. of Peritoneum -

Pelvic peritonitis or Perimetritis

1. Surface becomes cloudy & roughened
2. Effusion of serum takes place generally lodges in Pouch of Douglas
3. Coagulation stiffening & fastening the organs together "like Plaster of Paris"
4. Adhesions form. Fibrous bands organise from organ to organ etc.

In other cases

5. Purulent accumulations. Abscess formation at sides of broad lig. If such an abscess open we get fistulae in various directions

Period of Preg at which abortion occurred -	No of Births at each period	No Stillborn	No living at birth	No living at end of month after birth
2 month	35	—	—	—
3	275	—	—	—
4	147	—	—	—
5	30	—	—	—
6	32	24	8	—
7	55	38	17	3
8	28	23	5	1

Abortion

1 abortion in 4 pregnancies.
But many early abortions are quite unnoticed -

3rd + 4th month gives greatest number of abortions.

The embryo may have perished before this period -

Causes

- a. Ovary (disease + death of)
- b. mother

- c) Ovary or membranes may be at fault
- d) May be local causes -
Decidual membranes at fault -
Wall of Uterus diseased -
Tumours + displacements
Diseased surrounding parts
Ovarian tumours etc -

general causes

Excesses, want of nourishment
anaemic condition, syph taint,
fevers, local inflammations,
shock, Physical or mental.

INTERRUPTED GESTATION.

ABORTION AND PREMATURE LABOUR.

Definition.

Causes—*a.* Foetal,

b. Maternal—local and general.

Symptoms,

Diagnosis,

Prognosis, •

Treatment (*a*) when Abortion threatens,

(*b*) when Abortion certain.

After-treatment.

over exertion - accidents -
All acute diseases -

Symptoms

1. Onset of Pain - Intermittent -
Due to muscular action being set
up in uterus
2. Haemorrhage - in some a gush
of blood, in others escape of
serum (clot remaining in uterus
or clots with blood -
May come in quantity or
only in drops -
3. Liquor Amnii escaping -
shreds & parts of foetus
escaping -
4. Diagnosis of early pregnancy

Always insist on seeing every
thing that comes away -

Sometimes simply blood escapes.

" Liquor Amnii "

" Foetus "

" all membranes broken
except amnion -

Sometimes Bare Uterum

" Reflexa, serotina &
contents -

" The entire uterine contents

CONTENTS OF GRAVID UTERUS.

I. MEMBRANES.

1. Deciduae.
2. Chorion:
Development,
Structure,
Relations.
3. Amnion:
Origin,
Structure,
Liquor amnii.

II. VESICLES OF EARLY OVUM—

1. Umbilical vesicle:
Origin, atrophy.
2. Allantoid vesicle:
Origin, vascular relations.

III organs by which the Foetus is attached
to the Uterus.

I. Umbilical cord
2. Placenta.

Decidua vera and all -
This last is the most satisfactory
case of all -

Prognosis depends on state of
Patient

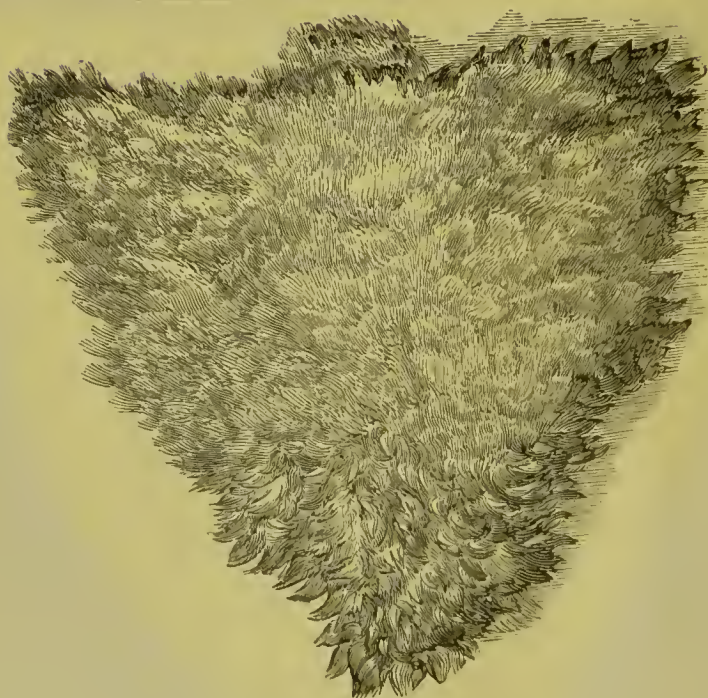
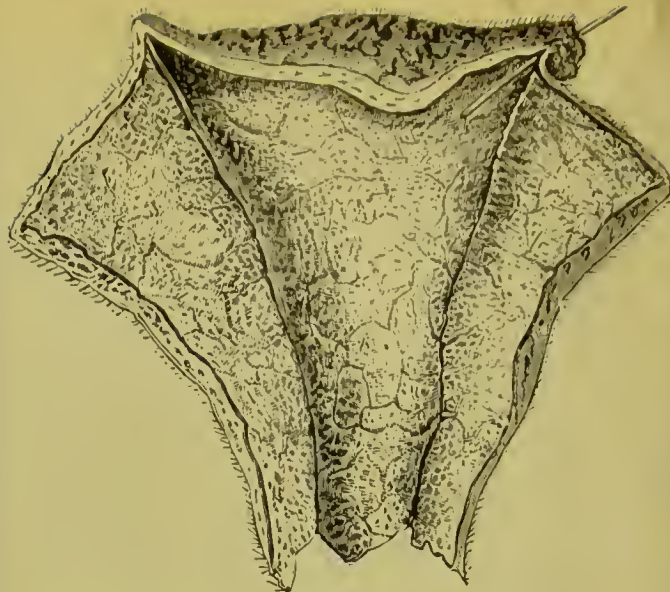
1. Tide over the threatened
abortion -
2. Hurry on the abortion -

Treat

1. Put Patient at rest.
Keep free from all excitement -
Feed on non-stimulating
diet - Clear out bowel -
but don't give violent purge -
Give sedative - Opiate to
still uterine action even
chloroform or chloral past
4th month -

From America we get a useful
uterine ~~stim~~ sedative

Viburnum prunifolium -
Very small doses of ergot
in some cases are useful
(if muscular coat lacks
tonicity)



2. Three indications

- I Lesser patients suffering
 - II Restrain haemorrhage
 - III Ensure complete clearance of the uterine contents
-

∴ give

I. Chloroform (3-5 gr)

II. Ergot ʒj-ii of liq Ext. or hypodermic
Plugging canal of exit. (Pack Vagina)

may in
emergency
use rich

Handkerchief
+ vinegar.

on unplugging, "mole" of often at end
of the plug - ~~if~~ If not plug
with well placed sponge
tent - This checks haemorrhage
& also stim uterus to contract
& also dilates whole canal -

III. Do not leave patient till uterus is empty -
Give chloroform to relax all muscles etc.
Place patient on back, press on uterus
from above to push it as far as
poss into Pelvis - Introduce as many
fingers as poss - & by the pressure
from above get finger round &
round the surface of the ovum -
Get the Placenta completely loosened
away from the wall before you
employ any traction at all

When entirely loosed pull out with fingers or forceps - Then pass in finger again & make quite sure you have not left any fragments or fragment behind. This is most important.

The FINGER should be sufficient. If you have difficulty in pressing down uterus from above pull it down with Vulsella -

When empty the cavity should be washed out with hot antiseptic

1. Removes any fragments
2. Prevents haemorrhage
3. Stim: contraction
4. Is antiseptic

Give Patient rest & ergot T.C.D for some time -

Missed abortion - Perished ovum which is not cast off -

On diagnosing proceed as above -

Imperfect abortion ~~for~~ fragments left - Patient goes on suffering from haemorrhages - Uterus enlarged. Treat by Curetting or by

DIFFICULTY OF HUMAN PARTURITION.

ALLEGED SUFFICIENCY of Nature in all Cases of Human Parturition.

EVIDENCE OF FACILITY in the Lower Animals.

COMPARATIVE ANATOMY of the Pelvis.

PRINCIPAL CAUSES of Difficulty in Human Parturition from Pelvic
and other Peculiarities required for the Erect Posture.

PROOFS of its greater facility and Safety in Black Races.

Proposed Explanations.

introducing finger again.

When conception again occurs warn patient that she is liable to abort especially at same period of gestation as before + also in period of menses - K1 if syphilitic etc etc.

Full time Labour

Difficulties in Homo

1. Pelvis forms a complete boney ring -
2. Pelvis has whole weight of body on it -
3. Axis of ~~of~~ brim + outlet are different -
4. Head round in Homo wedge shaped in lower animals -
5. Sacral promontory absent in lower animals
6. Ligaments + muscles of human pelvis are much more rigid + tense than in lower animals -
7. Greater muscular effort ^{need} in homo to overcome these difficulties more easily cause exhaustion, inertia, + prolonged labour + so lead to septic absorption haemorrhage



8. Liability of homo to disease
9. " " " " Mal presentations.
10. Effects of civilization + modes of life
11. Easier in less civilized races -
Black races - Foetal head smaller -
but Post diameter of Pelvis larger -
Expulsive powers also greater -

Labours

1. Natural Head alone presenting -
Terminated within 24 hours -
2. Laborious Head presenting
but labour = -
- ~~3. Lingering~~ A lingering not terminating
in 24 hours -

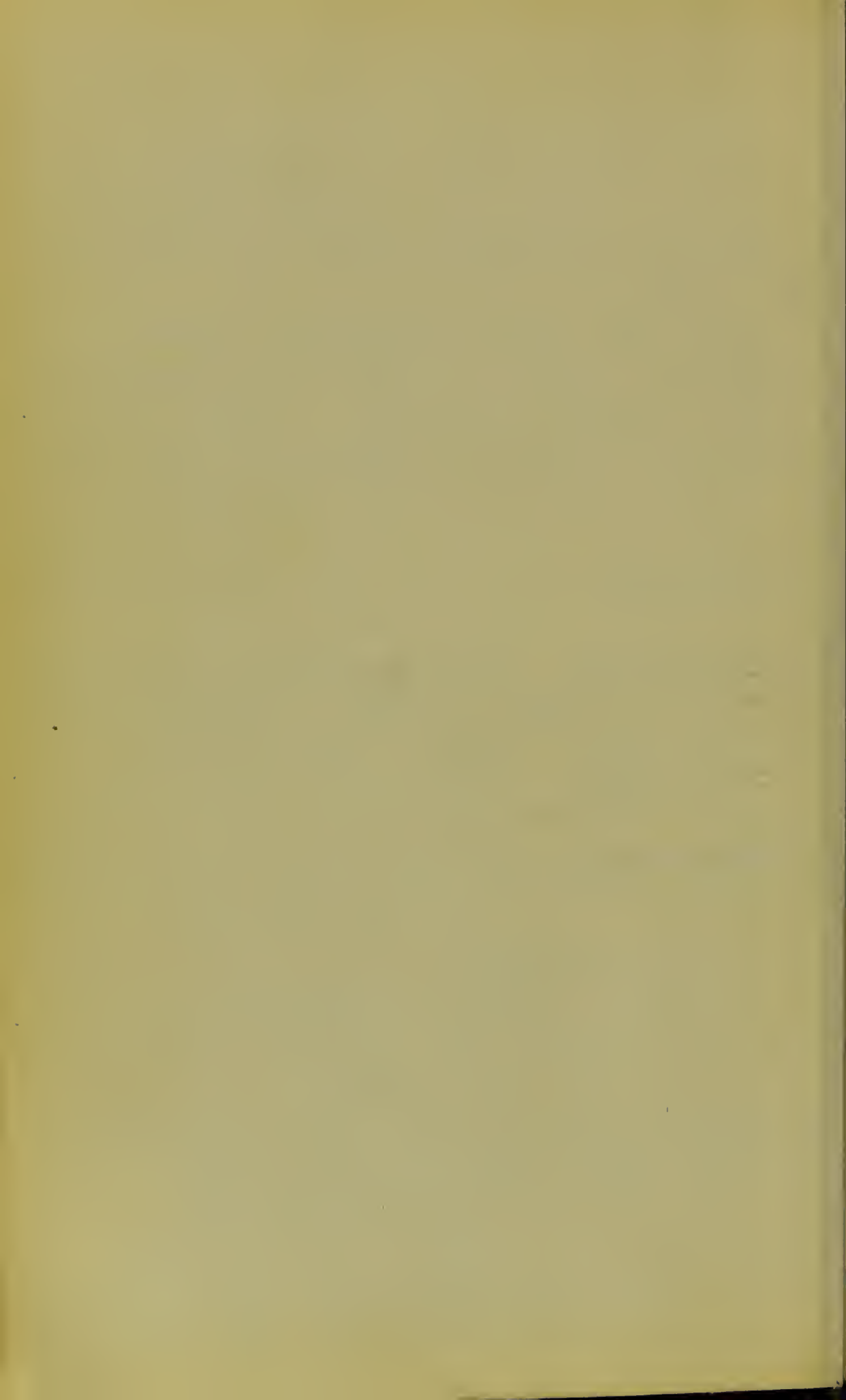
B. Instrumental

- i Safe to Mother + Child
- ii Destructive to child
- iii Injurious to Mother

Præternatural presenting part not head

- i Breech or lower extremities
- ii Trunk or upper extremities

And Anomalous or Complex
the complications of Mother -



Complications on part of Mother.

1. Haemorrhage
2. Rupture of Uterus etc
3. Displacements of Uterus
4. Affections of the Chest
5. Convulsions

Complications on part of Child:-

1. Prolapsus funis
2. Plural Births
3. Monsters.

Natural Labour

Stages 1. Promontion dilatation + expansion up to escape of waters.

2. Expansion of os to complete expulsion of child

3. From expulsion of child to complete emptying of uterus -

1st Stage - Uterine contractions -
"Shows" mucus tinged with blood -
Canals soften + vagina secretes -
The Pains ~~are~~ uterine contractions -
Spurious pains must be known.
Often set in 1 month before full term - These are generally irregular -

False pains are mostly abdominal
& do not so much affect the
back & sides =

Perhaps due to

1. Indigestion
2. Constipation
3. Bladder irritation
4. Fatigue (long days work)

During true Pain Uterus becomes
erect rigid & firm -

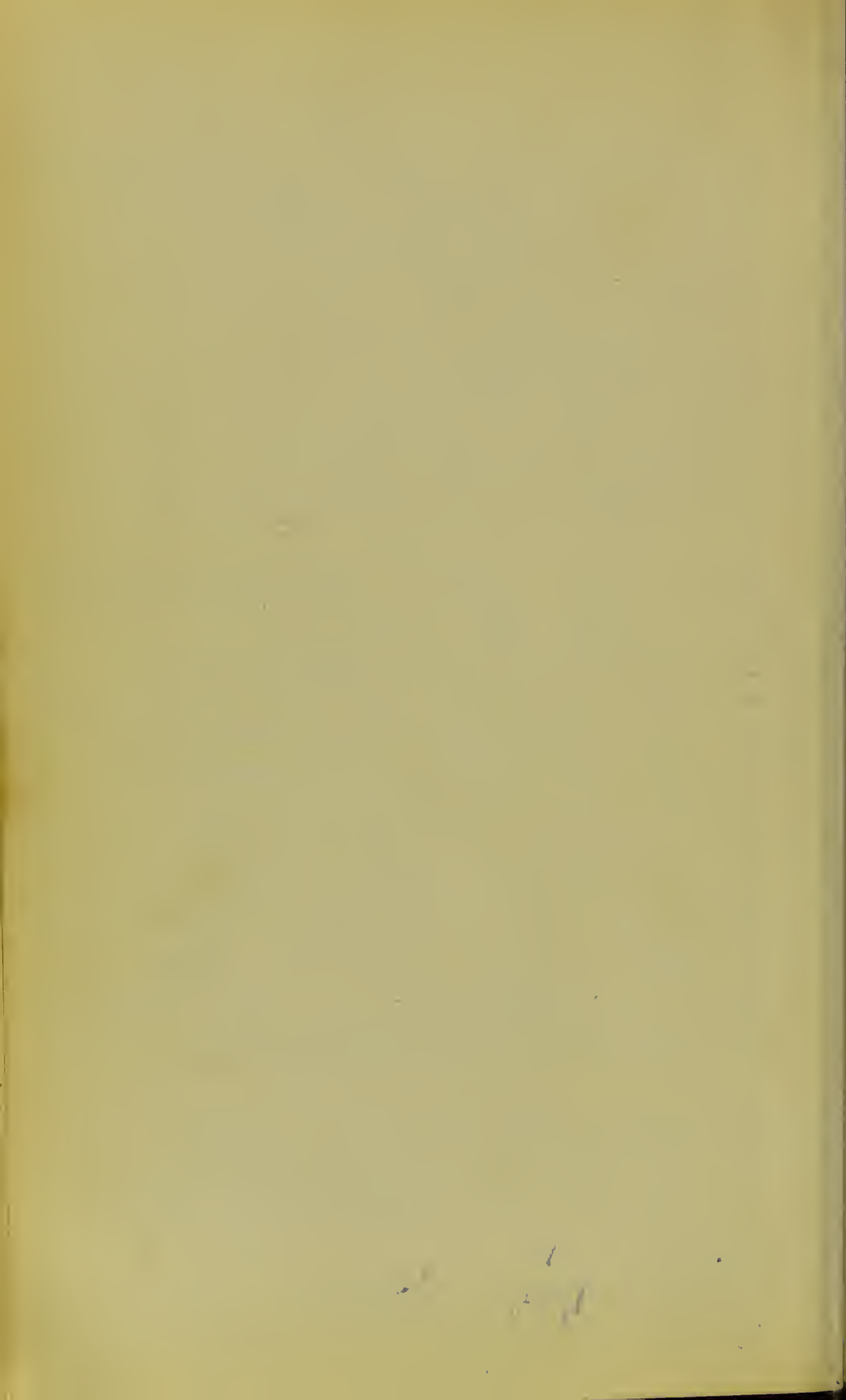
May harden in spurious
pain but only at one point -

P.V. - If true pains the cervix
is beginning to open up -
during pains lips tense &
bag of membranes tense -
If spurious cervix may be
quite unaffected - membranes
remaining quite flaccid -

Treat false Pains by emptying
bowel & relieving pass

→ Causes

Chloral may be given or
Opiate - Opium in any form -
Give it in **FULL** dose!



The spurious pains may lead on to the true pains -

The true pains -

At first the contractions are so slight that the pain is hardly felt (Fr: I lies)

Then later of cutting or sawing character

Eventually Rending, Strained, ~~too~~ bearing down up to the

- Extreme agony of child bed (9v7)

In early pains patient cries out & more loudly & freely & patient can breathe freely - Later can't breathe so well & only emits a smothered cry or relief when pain is passing off.

If nerves are pressed on by the head the extremities show pain -

The Pains come in waves & are intermittent - Cause is wave of irritation -

NATURAL PARTURITION.

Classification of Labours.

Stages.

Phenomena.

I. FIRST STAGE—DILATATION AND EFFACEMENT.

1. Premonitory Symptoms. *Shows. Cervix softened. Tumour sinks.*

Frequency, date, and mode of occurrence.

Nature. *One or two days before pains commence.*

2. Uterine contractions and pains.

irregular + abdominal False and true pains. *affects back & sides.*

Diagnosis and treatment of false pains. *True cause. Full loss of spin.*

Character, seat, and cause of true pains.

3. Gradual dilatation of cervix.

4 and 5. Formation and Rupture of bag of membranes.

Nature.

Variations in its shape and in time of rupture.

6. Full dilatation of the canal and orifices.

Mechanism by which it is effected.

29

II. SECOND STAGE—EXPULSION.

Change in character of pains.

7. Descent of head into pelvis.

Mode of presentation and descent.

8. Formation of perineal tumour.

9. Full dilatation of external parts.

Compression of head; caput succedaneum.

10. Expulsion of head and body of child.

III. THIRD STAGE—DELIVERY OF PLACENTA.

11. Detachment of placenta.

The mode and time of its occurrence

12. Expulsion of placenta and membranes.

Mechanism of this. *Direct pressure*

Duration of Parturition and of its several stages.

This intermission is lucky for the Mother - She can regain to some extent her vitality + strength. During Pain there is stagnation in the Placenta the circulation being suspended. This intermission is also good for the Foetus.

Expulsion of Placenta

Not due to extrav: of blood behind it -

Does not occur during diastole ~~as~~ only occurs by direct pressure squeezing placenta outwards in the direction of least resistance -

1 st Stage	7 $\frac{1}{2}$ hrs
2 nd Stage	2 $\frac{1}{2}$ hrs

MECHANISM OF PARTURITION.

Three Factors : expulsive Powers or forces, maternal Passages or canals,
body passing or Passenger.

The factorial elements of each of the three stages.

I. FIRST FACTOR : THE POWERS.

(1.) The Uterus—Essential Power.

about 17 lbs The force, nature, and mode of its contraction.

(2.) Abdominal muscles and diaphragm—Accessory Powers.

(3.) Weight of Uterine Contents. *only of use when in erect position .7 lbs.*

II. SECOND FACTOR : THE PASSAGES.

(1.) The Soft Canals : cervix, vagina, and perineum.

(2.) The Hard Canals : pelvis.

III Third Factor : The Passenger

31

Foetus

Membranes + Placenta -

abd. mus. & diaphragm

Mechanism of Parturition

Three factors

1. Expulsive forces or Powers
2. Maternal canals or Passages
3. Body passing or Passenger

I First Factor The Powers -

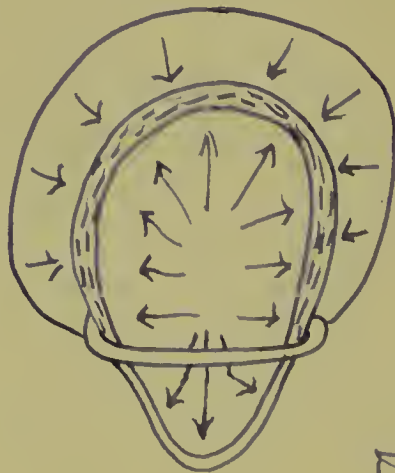
1. The Uterus is the Essential Power.

The hands on the abdominal walls will feel the muscular wall stiffening + contraction while the child is born = Human uterus is much more muscular than in lower animals because of the difficulties of the passages. A child is expelled with a force of from 15 - 20 lbs. The membranes break with weight of from 4 - 27 lbs of shot. Tait's finds they burst from 4 - 37 lbs -

But the full force of the uterus cannot ~~be~~ be so estimated - The head of the child carries

Usual Order of the Phenomena of Labour

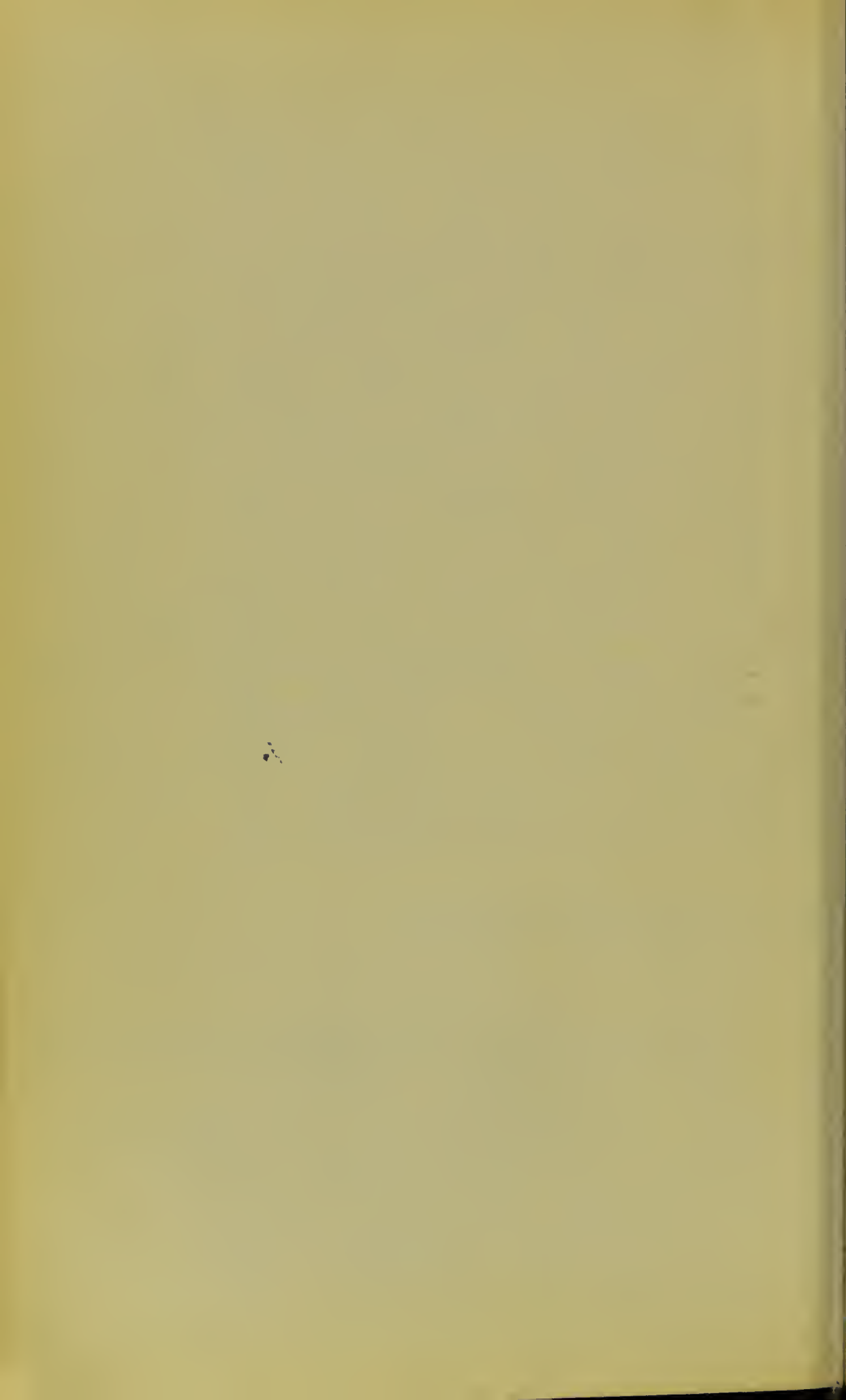
- | | | |
|---|-----------------------|---|
| Uterine action alone | <u>1st</u> | { 1. Premonitory Symptoms
2. Uterine Contractions + Pains
3. Gradual Opening of the Os Uteri
4. Formation of bag of Membranes
5. Rupture of Membranes -
6. Full dilatation of os Uteri - |
| Uterine + accessory powers | <u>2nd</u> | { 7. Descent of Head into Pelvis
8. Formation of Perineal tumour
9. Full dilatation of external parts
10. Expulsion of head + body of Child |
| Uterine + accessory powers acting in succession | <u>3rd</u> | { 11. Detachment of Placenta
12. Expulsion of Placenta + Membranes |



a good deal of the pressure -
The contractions are quite involuntary.
The center for the uterine contractions
is probably in the lumbar region,
but it has not been determined.
But labour in pigs can go on
~~also~~ with spinal cord removed -
The action is probably peristaltic.
Besides contraction we have retraction
& thus the contractions as they
go on increase in intensity -
During contraction the long +
transverse diameters are
shortened & the ant: post.
slightly enlarged.

~~II Second Factor~~

- 2) Abdominal Muscles + diaphragm
are accessory Powers -
This contraction is voluntary.
Thorax must be inflated -
They add an enormous amount
of pressure to the uterus -
The uterine contents press
→ outwards & the only place



where this is not resisted is at the
of uteri.

Thus :-

These accessory powers can
only assist the uterus in the
second stage (ie when
is fully dilated + membranes
burst + head in pelvis).

3) Weight of Uterine Contents

The only help the foetus gives
is by its dead weight (7 lbs)
This only occurs in erect posture.

The Powers have to effect the
dilation of Cervix + lower
seg of uterus -

2. To Burst the Membranes
3. To dilate the vaginal
cavity.
4. Overcome the resistance of
the curves of the Pelvis -
5. The perinaeum distended
6. Vulva orifice has to be
distended
7. Placenta expelled.

II Second Factor: The Passages

1. Soft Canals.

lower segment of Uterus has to become expanded also cervical canal - This is 4" in width + 4" in length during passage of child -
Vagina - Ant wall driven downwards & Post wall dragged upwards -
Thus the canal becomes continuous from the fundus to the vulva -

2. Hard Canals

The Pelvis

- i Upper or false or greater Pelvis -
- ii lower or true or less Pelvis.

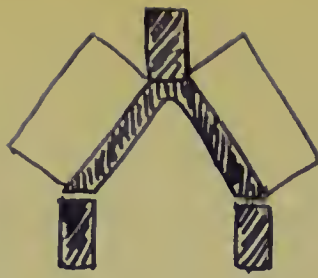
The false Pelvis ~~lies~~ lies above the rim of the true pelvis -

Interspinoous diameter 8"-9"-10"

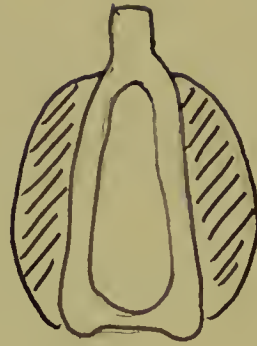
Intercristal diameter 1" more than above

If intercristal diameter is less or same as interspinoous the pelvis is usually ricketty -

The rim of the true pelvis is sometimes called the innominate line -



Standing



Sitting



Complete Pelvis built up:

his bounds the True Pelvis

1. The entrance is the innominate line or the brim of the true pelvis.

This is also called the inlet of the true pelvis for the foetus has to enter the true pelvis on its way to the outer world - also called the upper straight -

2. The cavity of the Pelvis extends from brim to outlet.

Outlet is formed of arch of Pubis in front, rami of pubis & ischium, & ischial tuberosities at sides & sacro-sciatic lig behind.

Measurements of true Pelvis.

2 straight or direct diameters

2 oblique diameters -

The 2 straight diameters run from behind forwards (Ant Post or conjugate diameter) & from side to side & at rt angles to conjugate - It is called the transverse -

OBSTETRIC ANATOMY OF PELVIS.

BONES : LIGAMENTS : ARTICULATIONS.

Two Cavities.

Upper or False Pelvis.

Diameters,

Inter-spinous, 8" - 9" - 10"

Inter-cristal. 1" more

Lower or True Pelvis.

Brim : Cavity : Outlet.

Diameters,

Antero-Posterior or Conjugate.

Transverse.

Oblique.

Average measurements.

Diameters	Brim	Cavity	Outlet
Conjugate	4	4½	5
Oblique	4½	4½	4½
Transverse	5	4½	4



The Conjugate runs from prom:
of sacrum to nearest point
in upper margin of sym: pubis
in front & has average
measurement of 4".

The Transverse runs from the
two most distant points in
the innominate line. It is
on an average ~~4 1/2~~? 5"

The 2 oblique run from
sacroiliac joint of one side
to the pectineal eminence
in front on the other side -
They are called right & left
as they ~~begin to the~~ begin at the
right or left sacro iliac
joint. These are intermediate
in length between Conjugate
& Transverse or $4\frac{1}{2}$ inches in length.

As we pass from Brim to outlet
the Conjugate increases & the
Transverse decreases.

Thus in cavity all diameters are
 $4\frac{1}{2}$ " (The oblique remaining the same)

CONFIGURATION OF PELVIS.

1. In relation to function of parturition ;
2. „ „ as a protecting organ ;
3. „ to the erect posture and progression.

Axis or central line, in brim, cavity and outlet.

Its obstetric importance.

Difference between male and female pelvis.

Changes from foetal to adult type.

Pelvis as modified by the soft parts.

At brim { Trans dim by Psoas
 { Conj dim by bladder etc
 { Sag dim by intestine
 { but least modified of all.

In cavity trans by pyriformis
outlet - by pelvic floor & legs

at outlet the same change
going on the Conjugate is 5"
+ transverse 4" (the oblique
remaining the same 4½")

Depth.

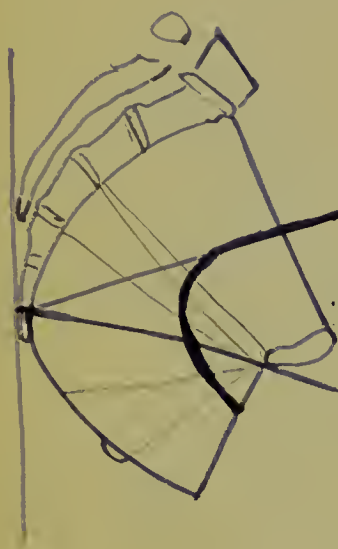
Sacrum	5"	Post
Side	3"	lateral
Ant wall.	1½"	Ant wall pelvis

The coccyx ~~seems~~ retains its
mobility in the Female up till
the Menopause -

The weight of the body does not
rest on the body of the sacrum
but on the joints behind the body -

The plane of the brim is the area
contained by the innominate
line -

The first parallel plane (Hodge)
is found at lower margin
of Symphysis pubis +
parallel to the plane of
the brim -



umbilicus



axis of inlet umbilicus

axis of outlet

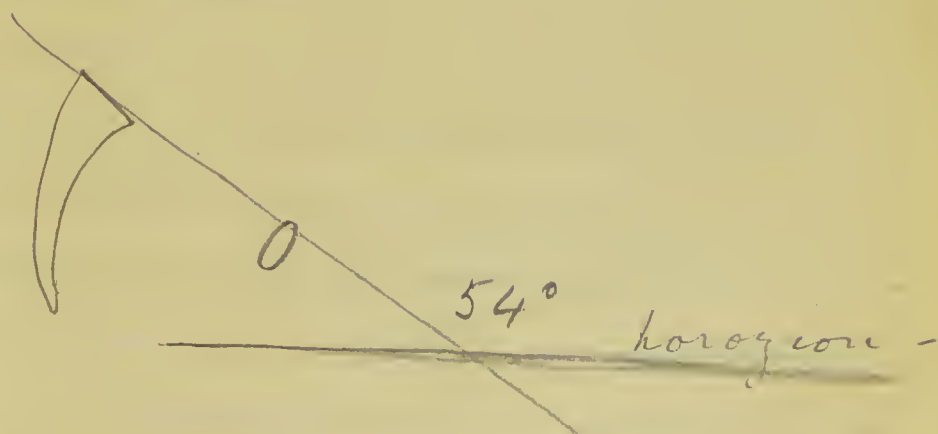
axis of inlet

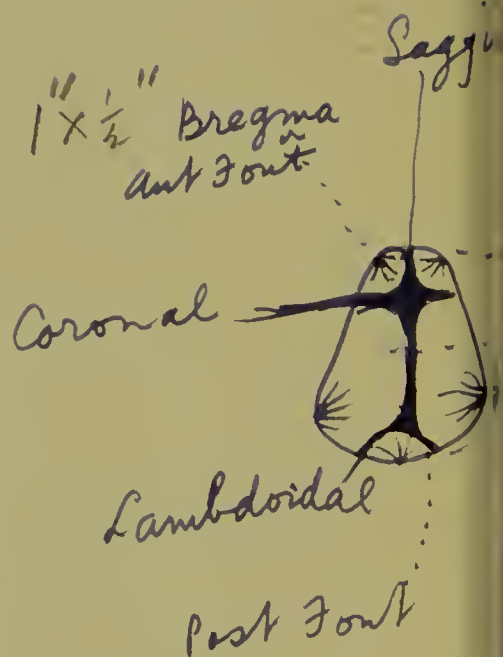
2nd parallel plane of Hodge
is at level of ischial spines
It is here that we speak of the
lower pelvic strait -

3rd parallel plane of Hodge
is around the coccyx.

The Pelvic axis or central line
or guiding line -
In some parts of the pelvis is
straight & some parts curved -

of pelvis slighter shallower





The Vertex is the point in
the Sagittal suture intersected
by the Vertical line -

IIIrd Factor

The Passengers

1. The Foetus
2. Lig Amnii
3. Membranes
4. Placenta

In the first stages of labor
The membranes & forewaters are
the only passenger -

In 2nd stage
The ~~foetus~~ foetus

In 3rd stage

Umbil cord, Placenta + membranes.

The Foetal Head

- Sinciput or Frontal region
- Vertex
- occiput

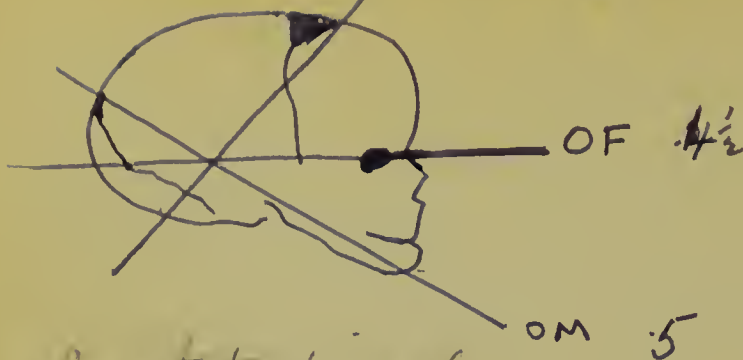
Protuberances - all the centers of ossification

The Bregma is lozenge shaped -

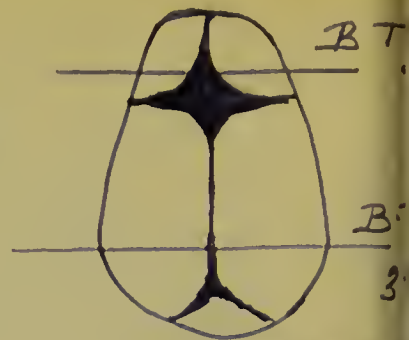
The Post font is small + triangular -

If you make press: the occ angle
can be depressed under the
two parietal bones -

S.O.B. 4



Longitudinal
Diameters



Transverse
Diameters

III. THIRD FACTOR: THE PASSENGER.

Membranes and Fore-waters.

The Foetal Head.

Regions—Protuberances.

Sutures—Fontanelles.

Diameters.

(a) Longitudinal—

Occipito-Mental—O M. 5

Occipito-Frontal—O F. 4 1/2

Sub-Occipito-Bregmatic—S O B. 4

(b) Transverse—

Bi-Parietal—Bi P. 3 1/2

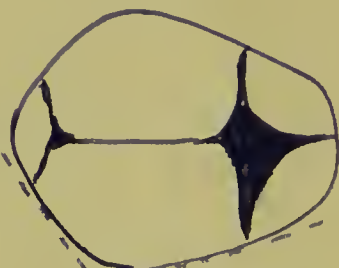
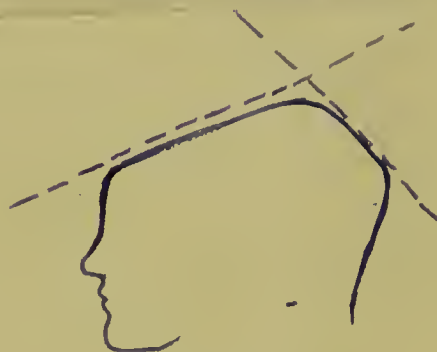
Bi-Temporal—Bi T. 2 1/2

(c) Perpendicular—

Trachelo-Bregmatic—T B. 3"

Fronto-Mental—F M. 3"

Wedge form of Head in various Sections.



Obliquities.

~~Nägele~~
Nägele

Röederer

Röederer

Michaelis

Diameters of the Foetal Head

Occipito Mental	5	Inches
Occipito Frontal	$4\frac{1}{2}$	"
Sub occipito bregmatic	4	"
Bi parietal	$3\frac{1}{2}$	"
Bi temporal	$2\frac{1}{2}$	"
Perpendicular both	3"	"

Relations of Factors in Labour

The common presenting part is the vertex in a typical case - If the head enter the pelvis obliquely [ie plane of head not parallel to plane of brim of pelvis] we call it the *Megalie obliquities*).

Normally the head enters the pelvis vertex first the occ frontal plane parallel to the plane of the brim of the pelvis - *

If it enter with the occiput lowest we call it the *Rodier obliquity* - If sinciput lowest it is a *Michaelis' obliquity*.

Presentations of head.

Vertex, most common.

Positions of head.

History of opinions with regard to these.

Nomenclature of common oblique positions.

Occipito-Laeva-Anterior.

Occipito-Laeva-Posterior.

Occipito-Dextra- Posterior.

Occipito-Dextra-Anterior.

Diagnosis of Presentation and Position.

CRANIAL POSITIONS.

-
- L. O. A. I. Occiput points to *left* foramen ovale.
* Sinciput to *right* sacro-iliac synchondrosis.
Long diameter of head in *right* oblique.
Occipito-Anterior.
- R. O. A. II. Occiput points to *right* foramen ovale.
** Sinciput to *left* sacro-iliac synchondrosis.
Long diameter of head in *left* oblique.
Occipito-Anterior.
- R. O. P. III. Occiput points to *right* sacro-iliac synchondrosis.
* Sinciput to *left* foramen ovale.
Long diameter of head in *right* oblique.
Occipito-Posterior.
- L. O. P. IV. Occiput points to *left* sacro-iliac synchondrosis.
** Sinciput to *right* foramen ovale.
Long diameter of head in *left* oblique.
Occipito-Posterior.

Relative frequency.

1.

3.

2.

4.

normally occiput + sinciput
enter in same plane -

Positions of head

Straight diameters VERY rare
+ unlikely in normal pelvis -

The oblique diameters are those
occupied by the head in normal
cases of labour - This was
first pointed out by Solayries -

as a rule the long diameter
of the child's head lies in
the right oblique diameter -

In the largest number of cases
the occiput looks forwards

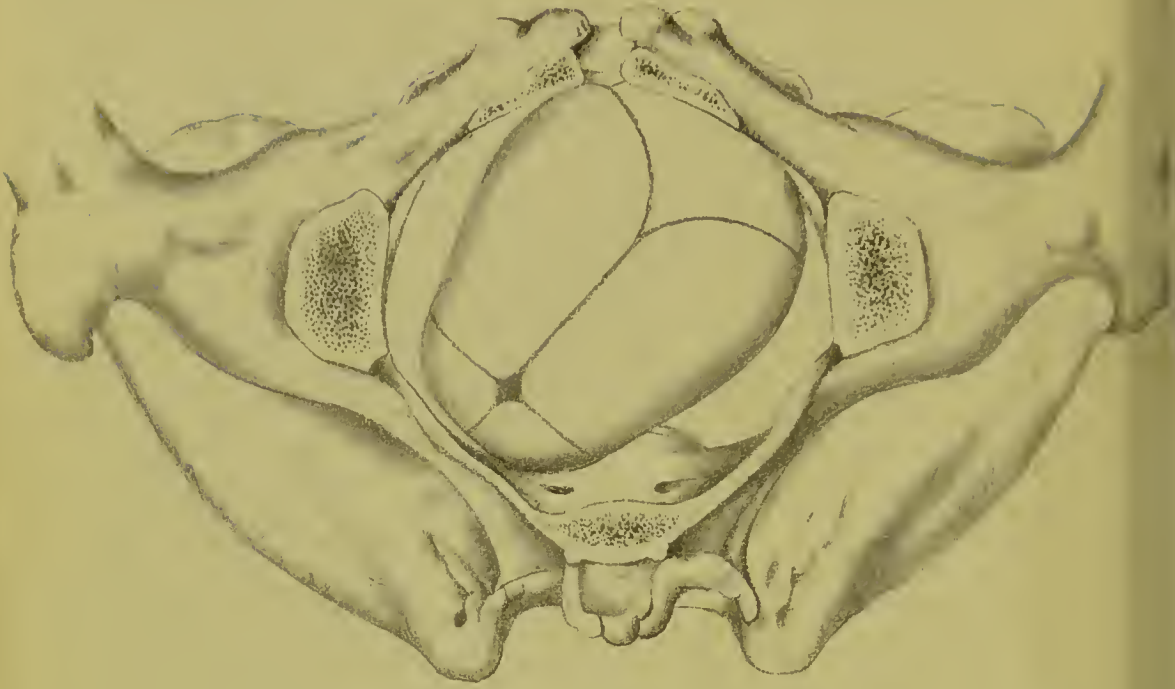
in this diameter - The other
(occ looking backwards) is not
so common -

The oblique diameters are

the roomiest + the
right oblique the roomier -

VERTEX PRESENTATIONS.

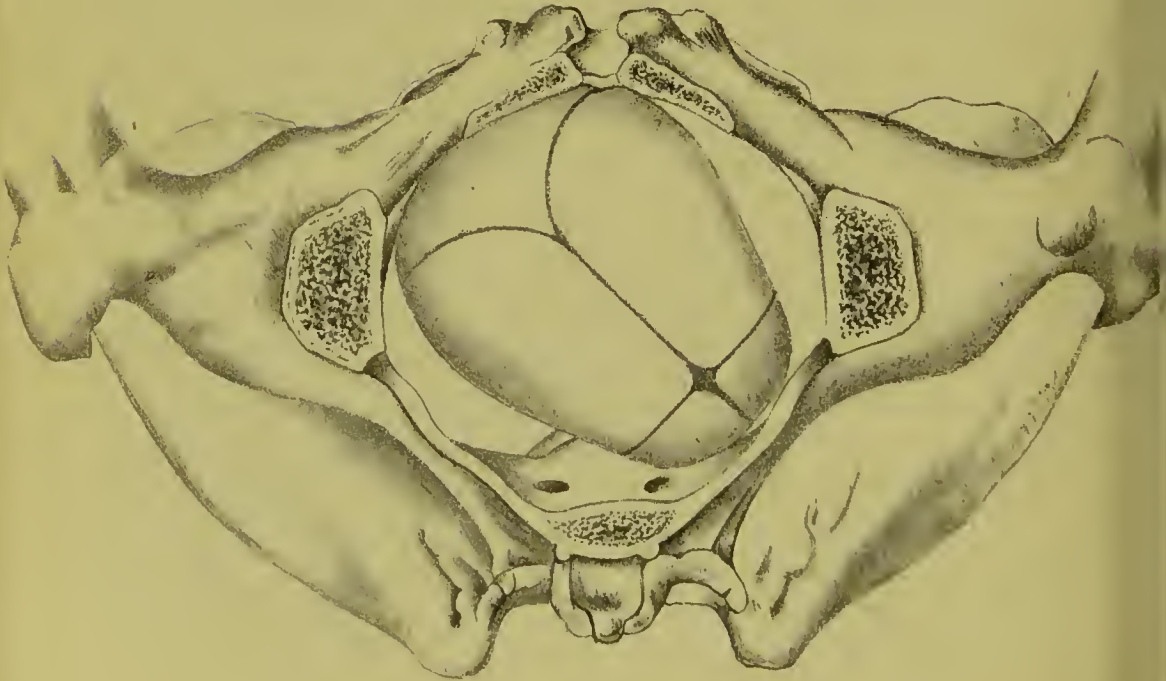
I



LEFT OCCIPITO-ANTERIOR—L.O.A.
First of Naegele. First in frequency.

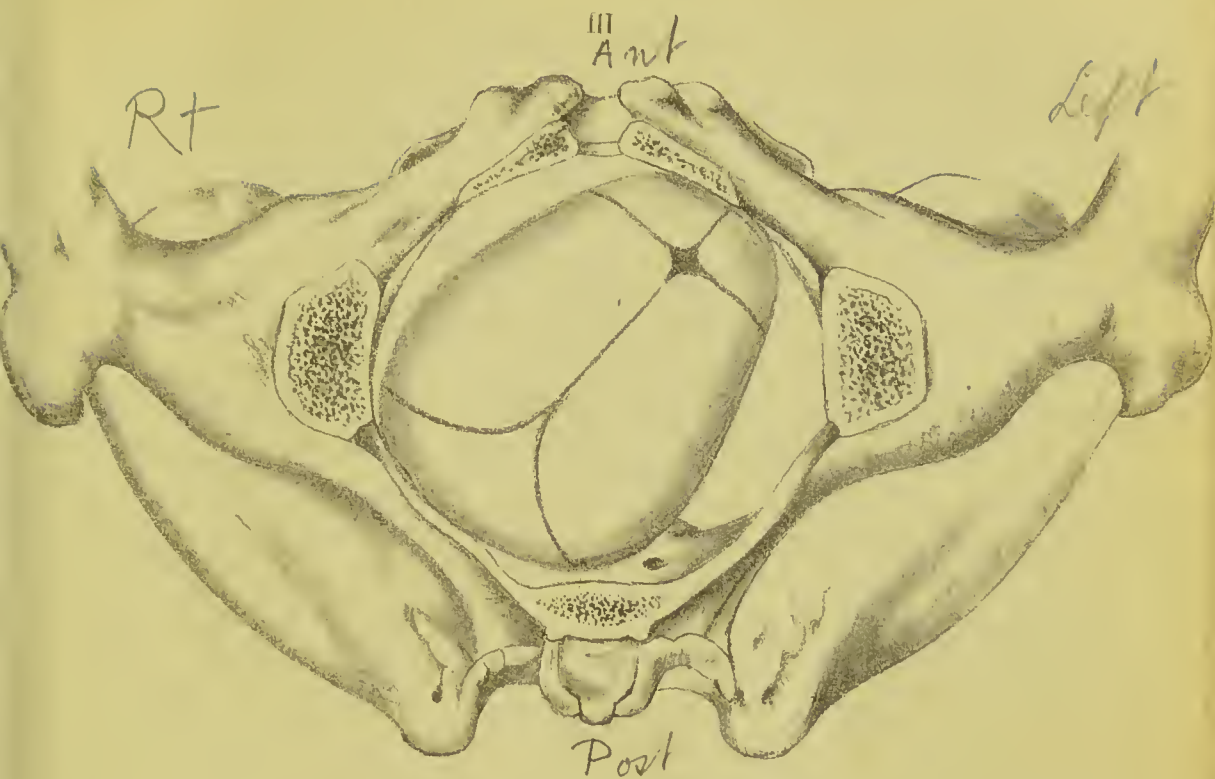
VERTEX PRESENTATIONS

II



RIGHT OCCIPITO-ANTERIOR—R.O.A.
Second of Naegele. Third in frequency.

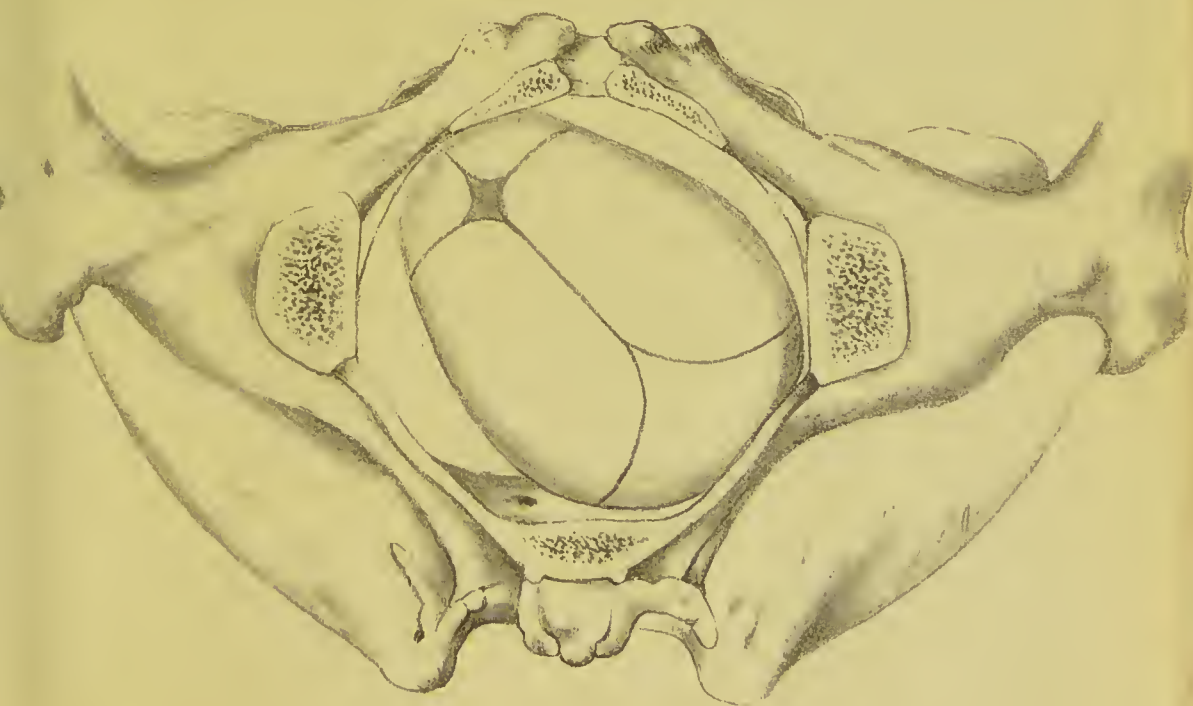
VERTEX PRESENTATIONS



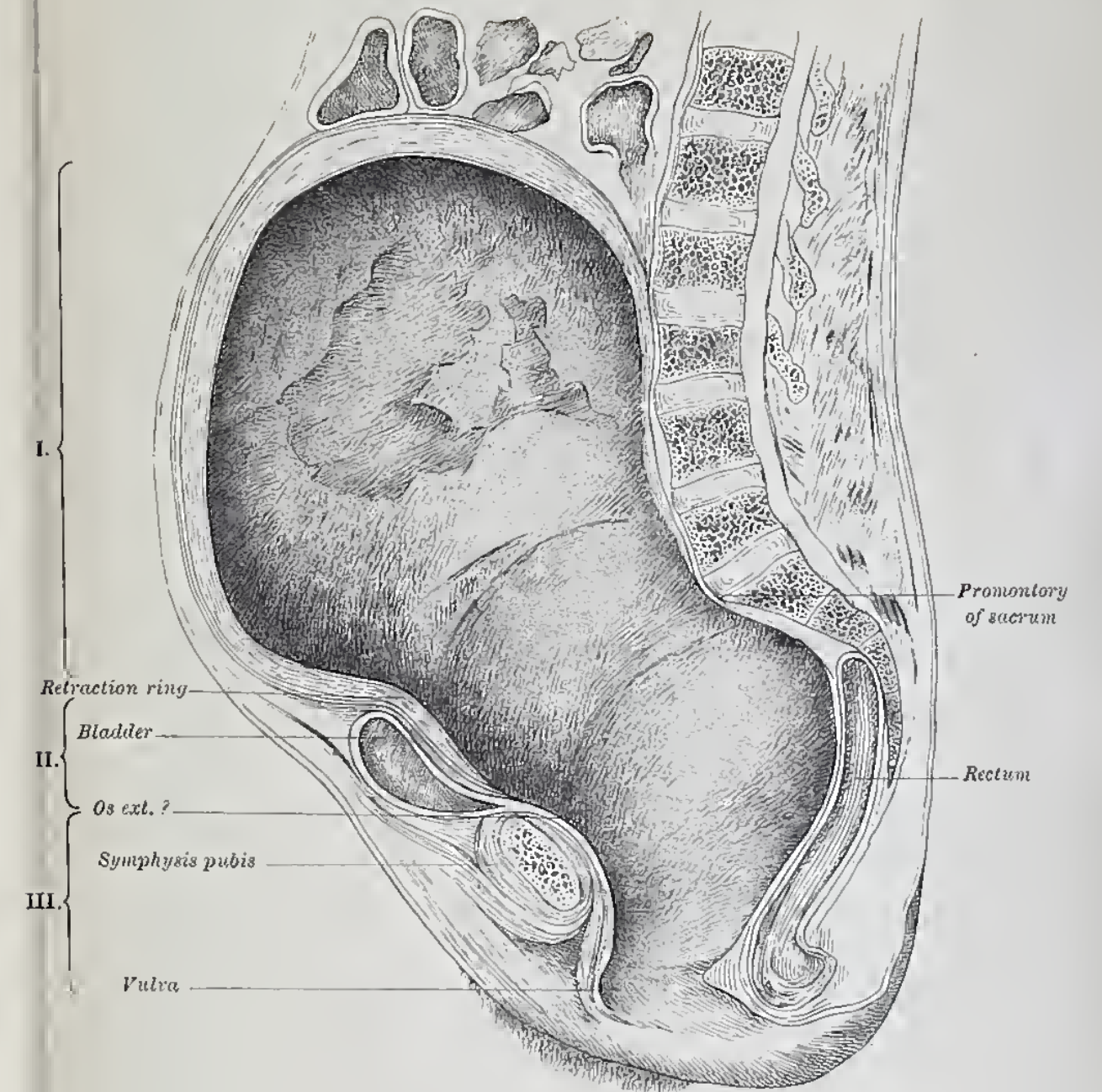
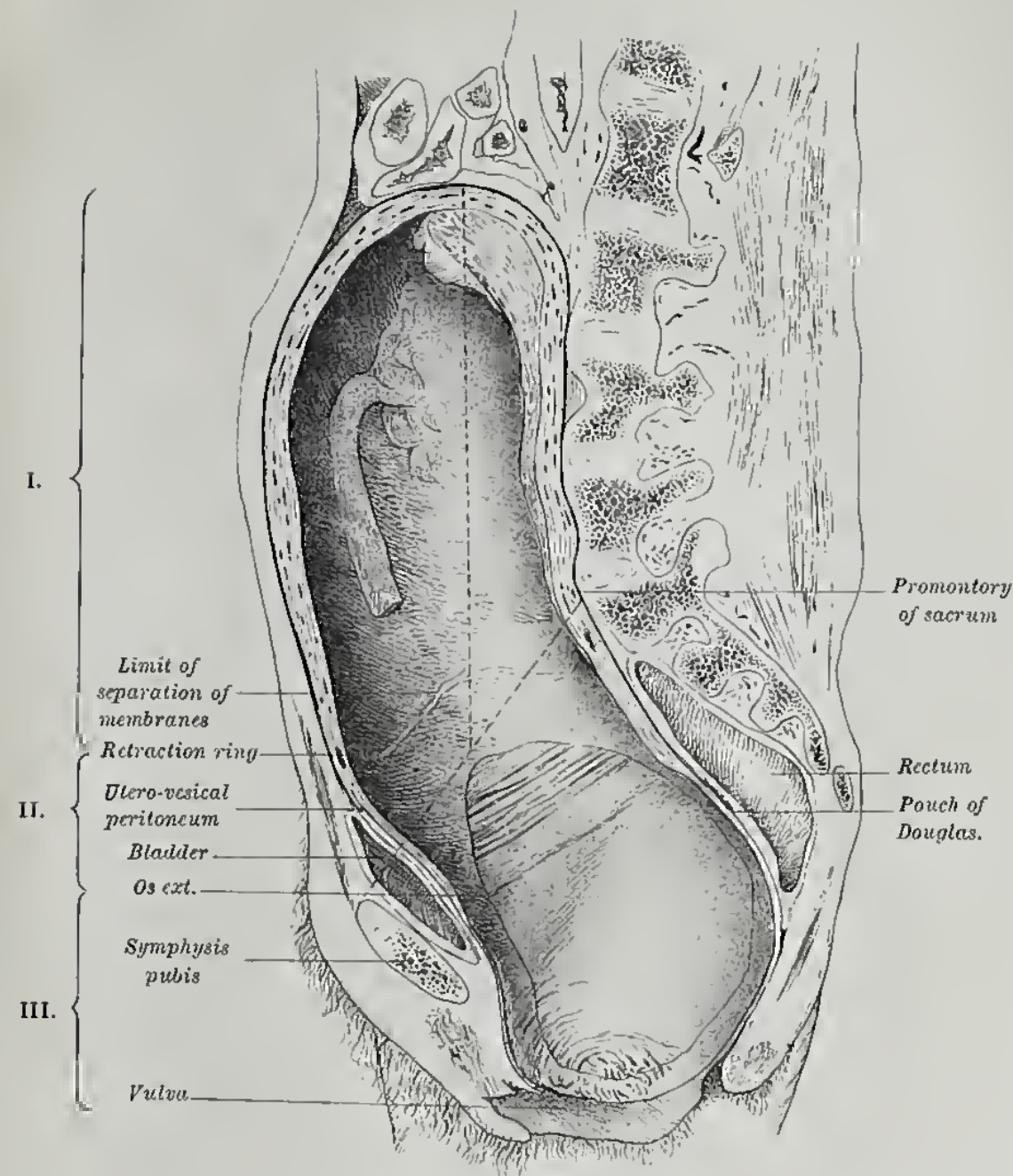
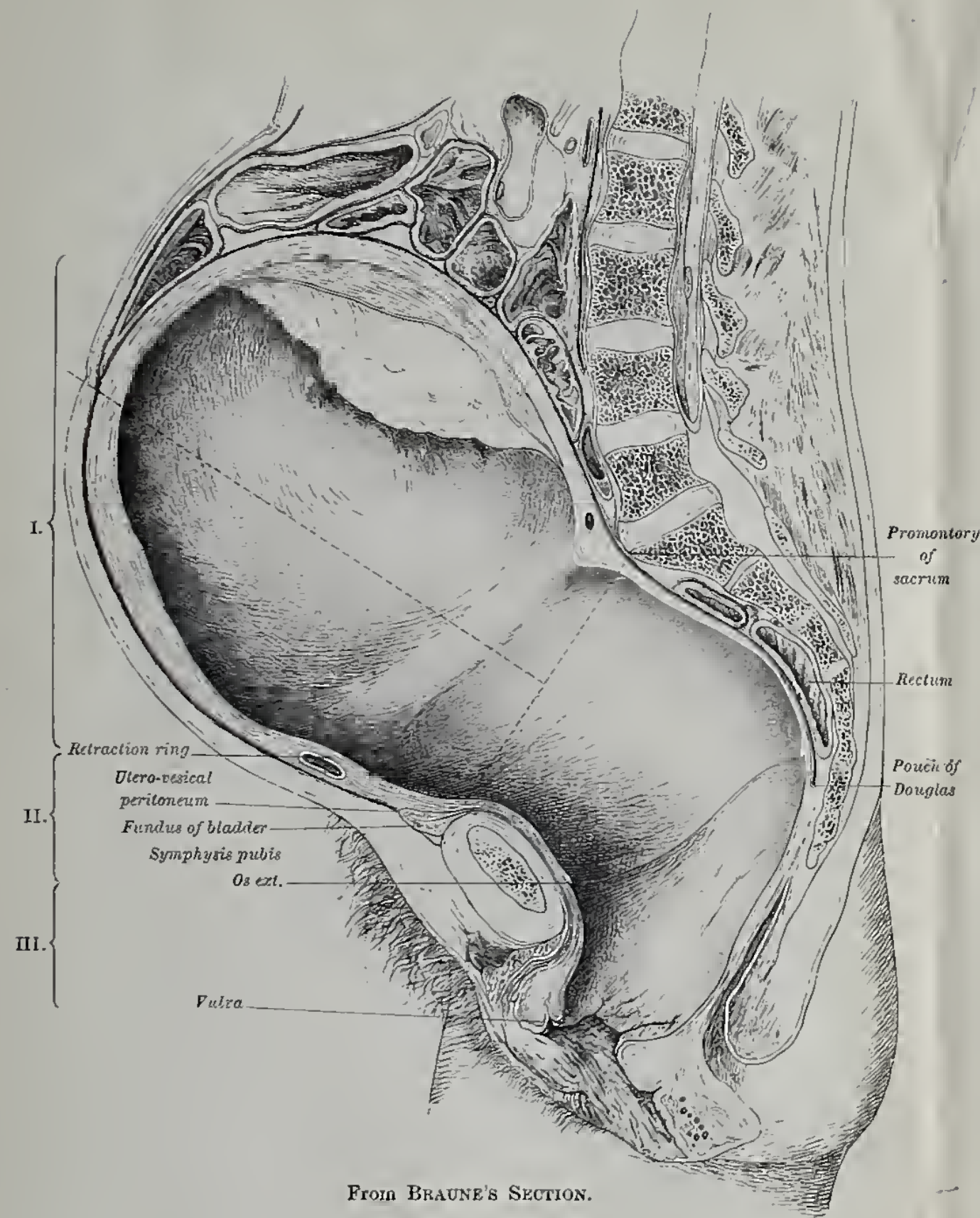
RIGHT OCCIPITO - POSTERIOR - R.O.P.
Third of Naegle. Second in frequency

VERTEX PRESENTATIONS

IV



LEFT OCCIPITO - POSTERIOR - L.O.P.
Fourth of Naegle. Fourth in frequency.

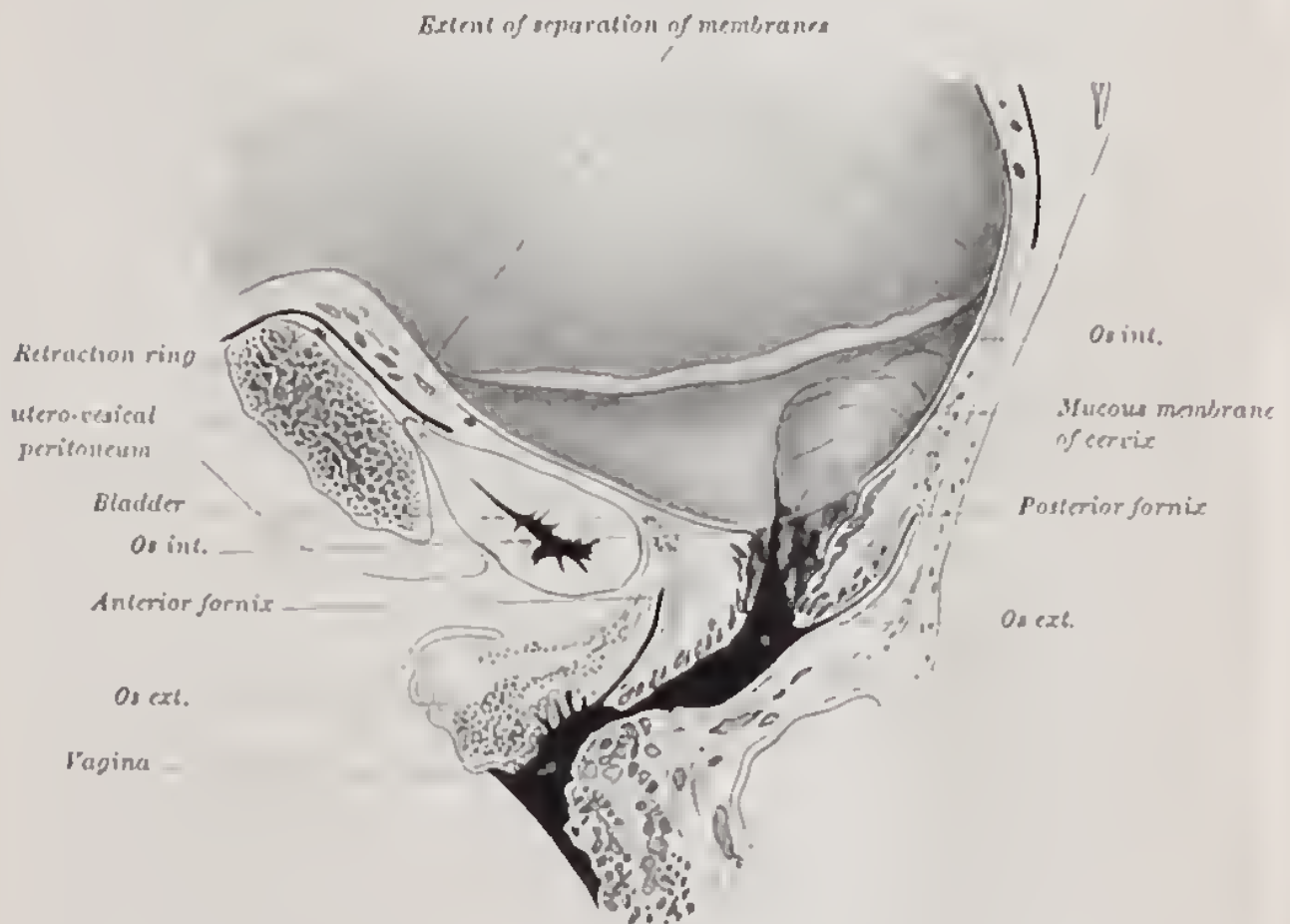


PL. IV.—THE GENITAL TRACT during the Second Stage.

Note the extent to which the space in the bony pelvis is diminished by the soft parts—especially the bladder and rectum; that the utero-vesical peritoneum with part of the bladder is drawn above the brim; the form of the uterus and direction of its long axis in Braune's and Chiari's Sections compared with Chiara's; the division of the genital tract, by the retraction ring and os externum, into three areas (I., II., III.); the thinning of the wall below the retraction ring; the non-appearance of venous sinuses in Braune's and Chiara's compared with Chiari's.

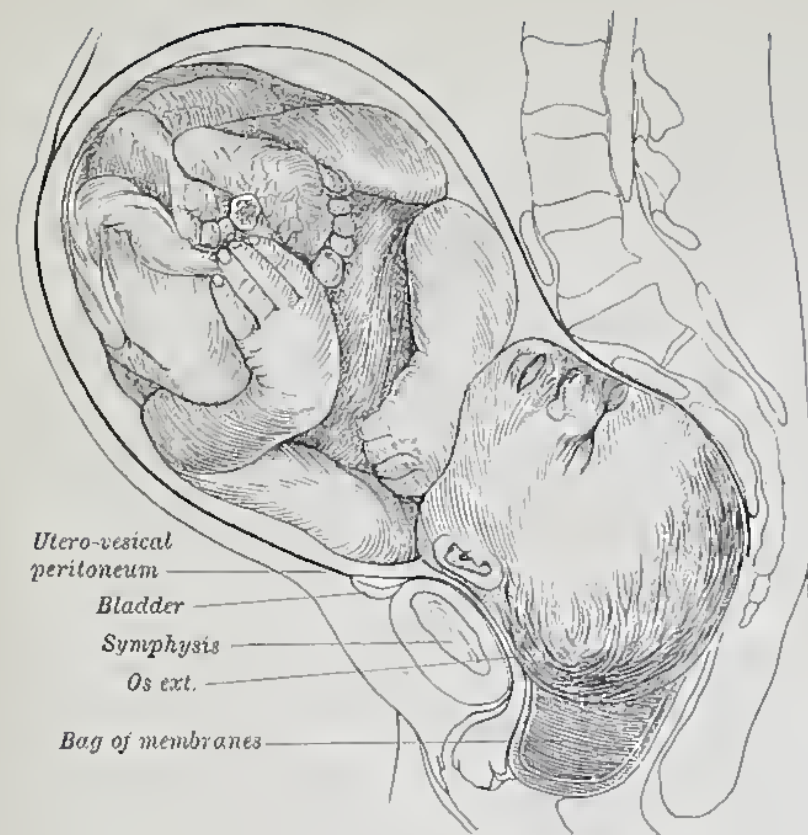
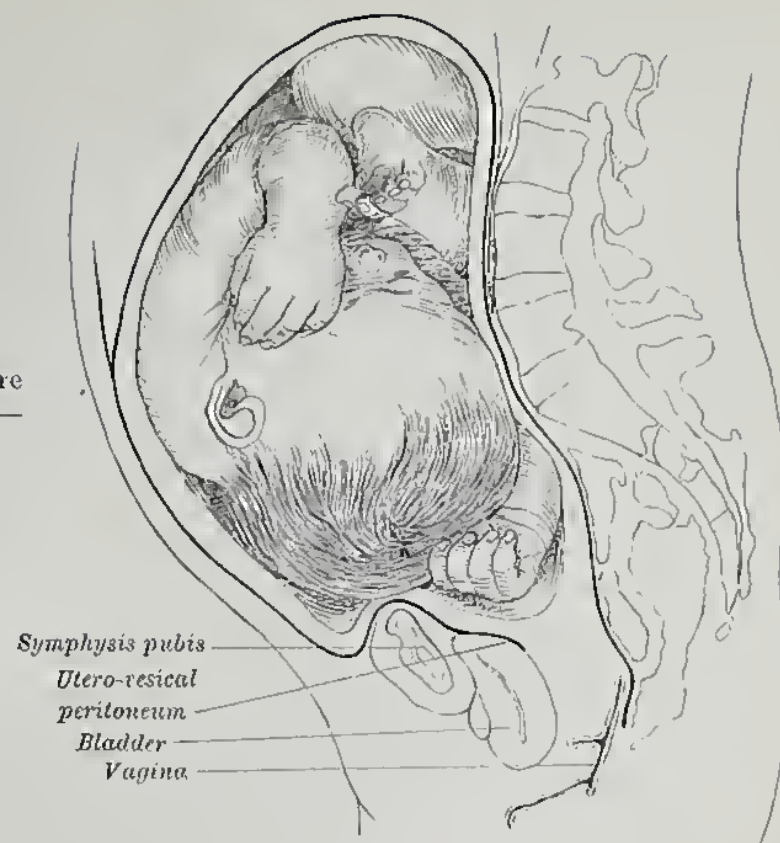
PL. III.—TOWARDS THE END OF THE FIRST STAGE,
from Schröder's Section.

The head of the fetus and liquor amnii have been removed, and the bag of membranes so far cut away to show their line of attachment.



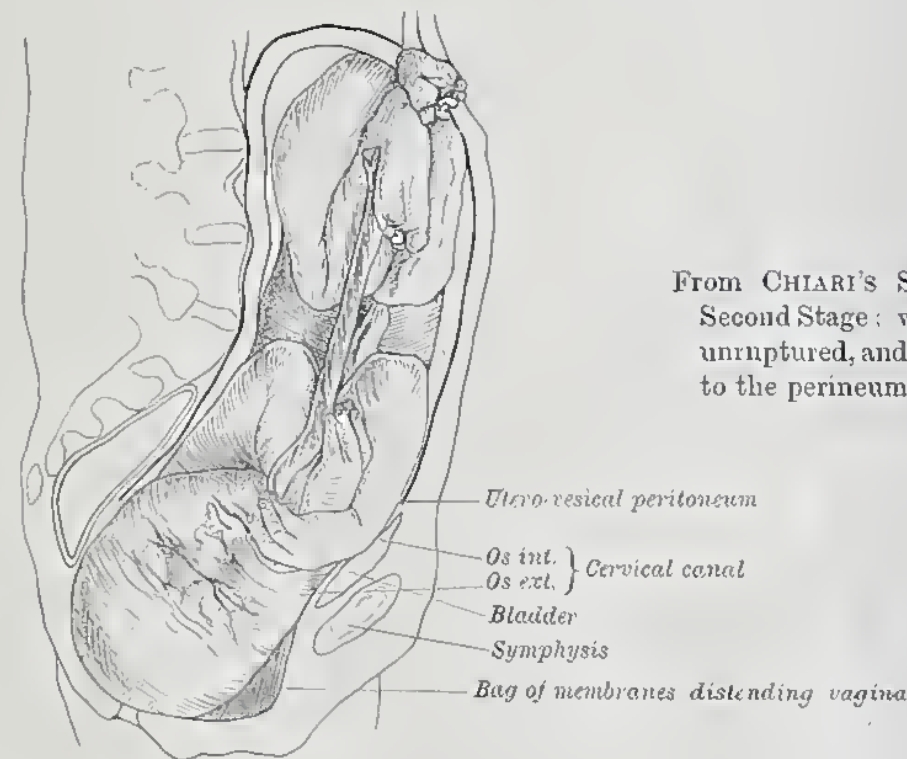
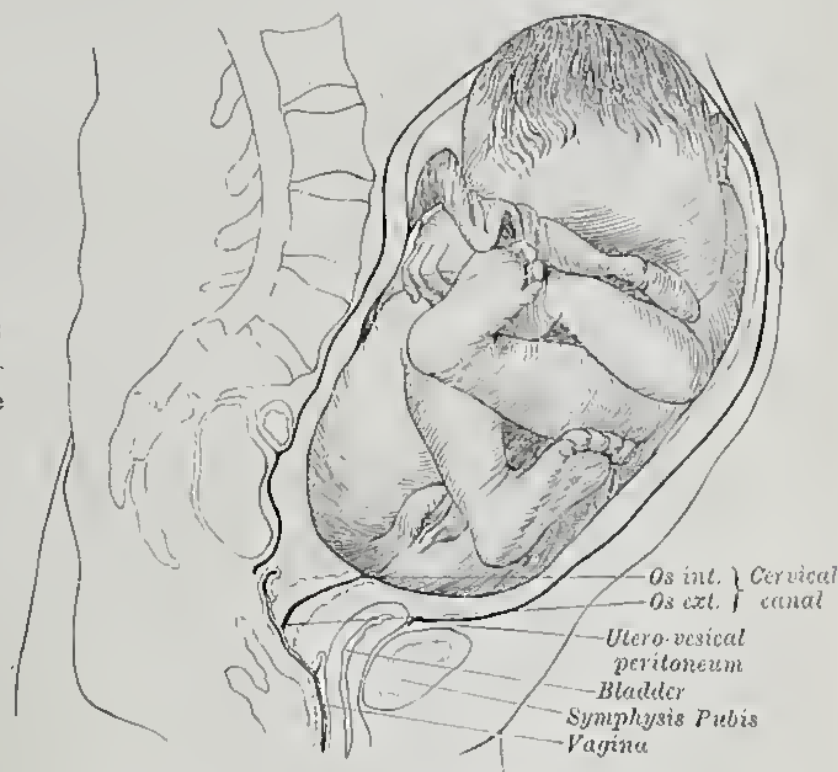
Note the dilatation of the cervix, the more advanced taking-up of its posterior wall, the thinning of the lower segment anteriorly below the retraction ring, the extent of separation of the membranes, and the bladder not drawn up.

From BRAUNE'S SECTION before Labour: a head presentation—right occipito-anterior.



From BRAUNE'S SECTION of the Second Stage (during a pain): unruptured bag of membranes at the vulva, and head in part in vagina.

From WALDEYER'S SECTION before Labour: a breech presentation with sacrum to the left.



From CHIARI'S SECTION of the Second Stage: with membranes unruptured, and head descended to the perineum.

THE FŒTUS BEFORE LABOUR

AND

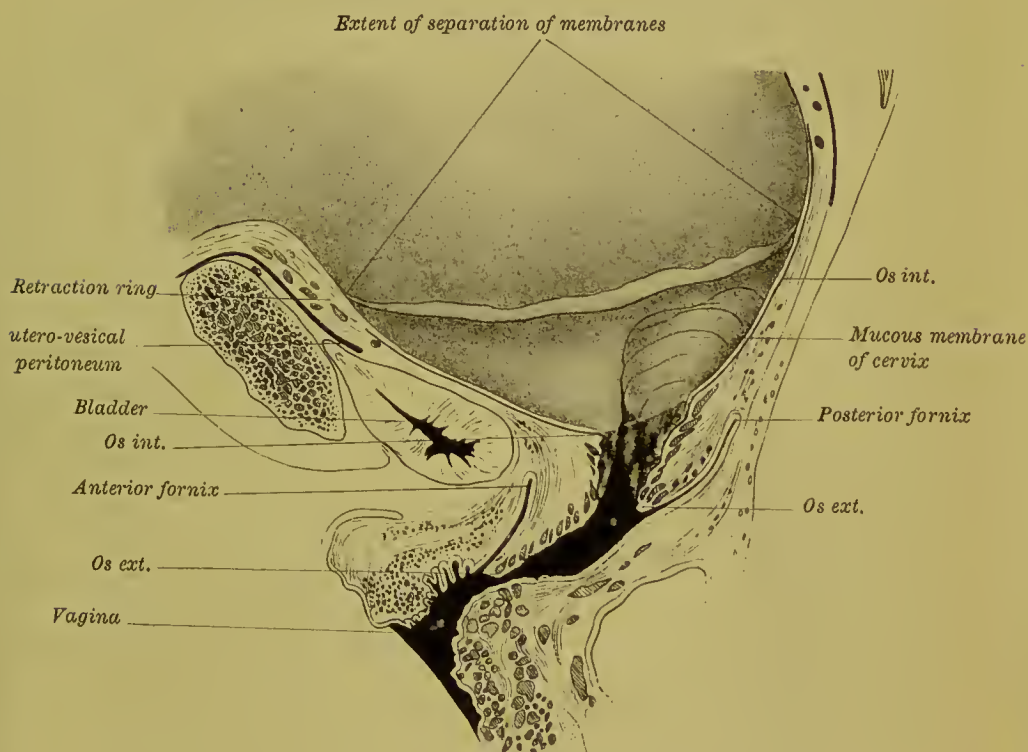
DURING THE SECOND STAGE.

Compare the length of the fetal ovoid, the flexure of the limbs, and the attitude of the head in the two periods; further, the change in long axis produced during the latter period by a pain.

Compare further (in Waldeyer's and Chiari's) the cervical canal, the vagina, and the position of the utero-vesical peritoneum and bladder.

PL. III.—TOWARDS THE END OF THE FIRST STAGE,
from Schroeder's Section.

The head of the foetus and liquor amnii have been removed, and the bag of membranes so far cut away to show their line of attachment.



Note the dilatation of the cervix, the more advanced taking-up of its posterior wall, the thinning of the lower segment anteriorly below the retraction ring, the extent of separation of the membranes, and the bladder not drawn up.



General Summary of Rules Regarding The First Stage of Labour

Examine to Detect the existence of
Pregnancy + of Labour - its progress -
the presentation + the state of the
passages -

Repeat the Vaginal Examination as seldom
as possible during the first stage -

In making the examination
introduce your finger or fingers
during a pain but do not complete
it till after the pain has ceased -

Allow the patient to lie or walk
about at pleasure till the Os Uteri
is dilated to $1\frac{1}{2}$ or 2 inches.

After this ~~patient~~ period place her
in bed + on the left side -

Keep the Urinary Bladder +
lower Bowel empty

Restrict the diet to nourishment
of the lightest form - avoid all
stimuli bodily or mental, but
endeavour to cheer + support her
Keep your Patient cool and the
room properly ventilated -

9. Prevent her fatiguing herself or making expulsive muscular ~~movements~~ efforts
10. Prevent or palliate any morbid symptoms that may supervene, as Rigor, Nausea, Vomiting, Irritability, & Despondency - & Delirium during the last part of the First stage -

Second stage

1. Continue all above rules relating diet, ventilation, & position
2. Examine as quickly as poss after rupture of membranes to ascertain if any part has prolapsed
Cord or hand
3. Repeat the examination occasionally to ascertain the progress of the Head
4. Palliate distressing symptoms
as -
Pain in the back
Cramps or spasms in lower extremities

Mechanism of Labour

Movements of the Foetal Head in its ~~descent~~

Descent goes on all the time.

but some refer it to the engagement of the first straight part of the pelvis where the head moves without rotating or flexing etc - The head has now reached Hodges 1st parallel plane -

Synclitism - The occip. frontal plane is parallel to the 1st parallel plane of Hodge at the end of 'descent' but now has to travel through a ~~see~~ curved canal - Thus the head tries to "level" itself to all the planes it passes through. This synclitism is not quite complete however.

The proper movements of the head
are 4 in number

Flexion + 3. Extension are the converse of each other
2 Int Rotation + 4 External Rotation are also the converse of each other

MECHANISM OF LABOUR.

MOVEMENTS OF THE FETAL HEAD :

Descent.

Levelling or Synclitism.

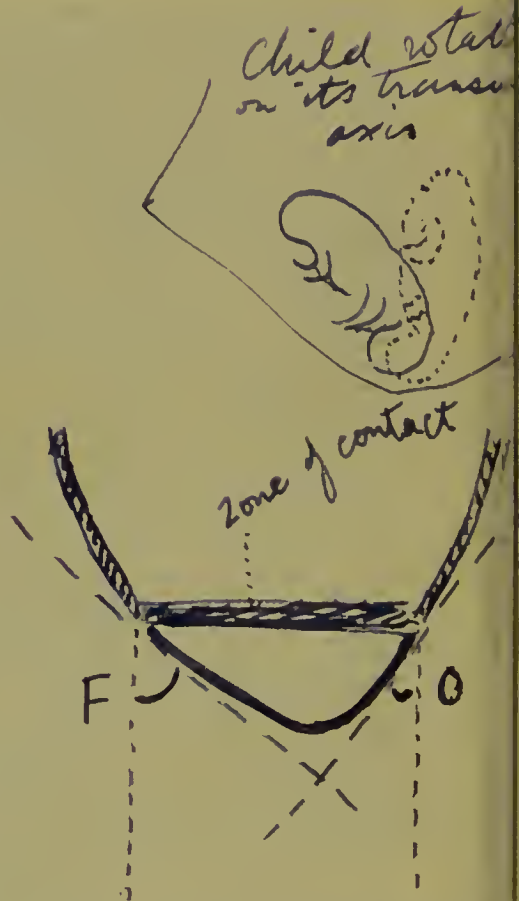
1. Flexion. *prim*
2. Rotation. *car*
3. Extension. *butler*
4. External Rotation. *on restitution after escape*

VARIATION IN ORDER OF OCCURRENCE.

NATURE, PLACE, CAUSE, AND EFFECT of each Movement.

MARKS ON, and MOULDING of the Head.

What? Where? How? Why?



Due to wedge shaped profile of child.

Flexion at brim
Internal Rotation in cavity of Pelvis
Extension at outlet
External Rotation after escape
from cavity

He may miss some of the above
but they all occur in typical
cases -

What is the nature of the Movement

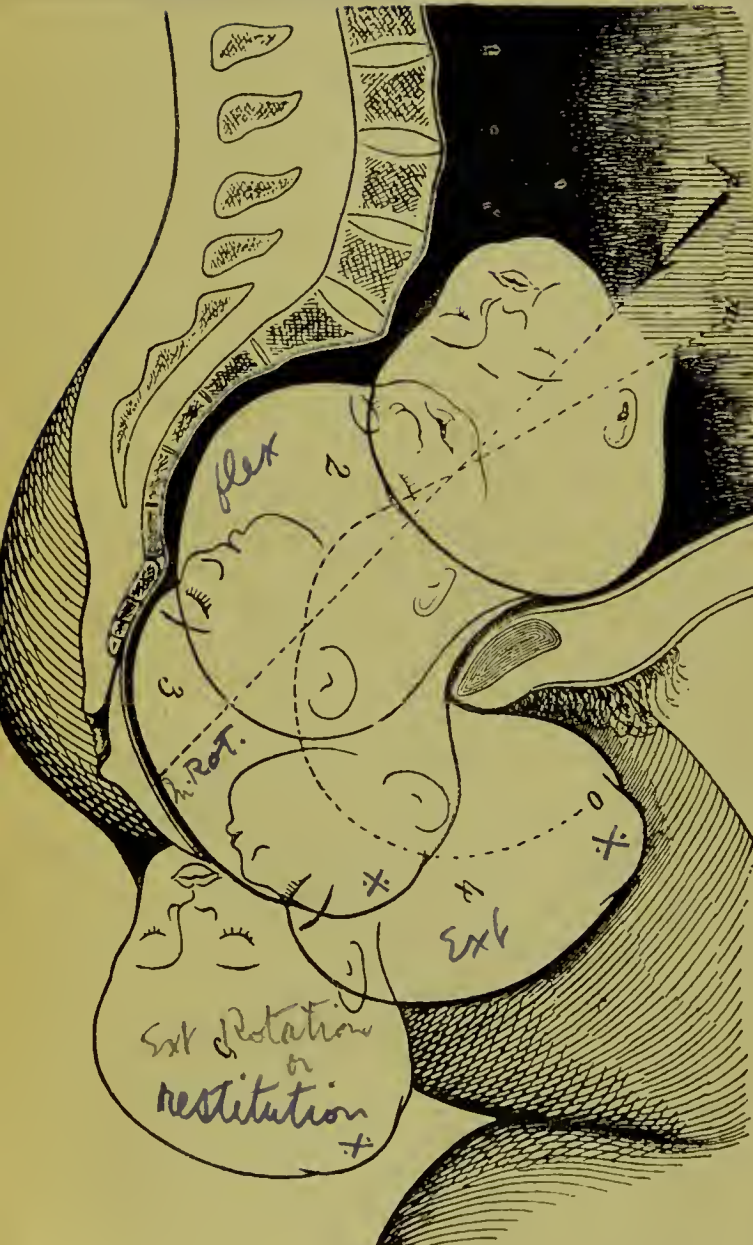
1. Flexion - Chin becomes
more closely approximated
to the sternum - The whole
child also rotates on its
transverse axis -

As a rule flexion becomes more
marked whenever the head
meets with more resistance
either ^{narrow} hard canals or
resilient soft canals -

It is the more pronounced
where the fit is good -

It brings the SOB diameter
into relation with the Pelvic
diameters instead of the
OF diameter -

That is to say 4" instead of $4\frac{1}{2}$ "



Due to wedge shaped horizontal section of child's head

2. Internal Rotation -

Nature of ? The head is now within the ~~pelvis~~ The whole foetus, in most cases, internally rotates on its longitudinal axis -

Where does it occur ? differs -

Cause ? Adaptation of head to canal through which it is being driven -

occiput rolling forwards -

Effect ? Adapts long diameter of head to long diameter of outlet -

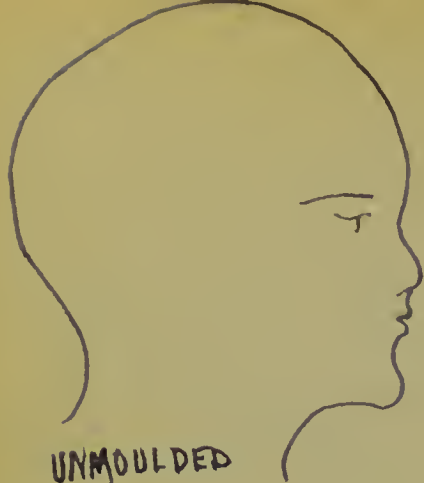
Extension -

Nature of. occiput is free to move forwards

Cause resistance by perineum below
+ pressure above -

External Rotation is restitution

The shoulders has now to adapt or be adapted to the diameters of the pelvis -



UNMOULDED



OCCIPITAL PRESS

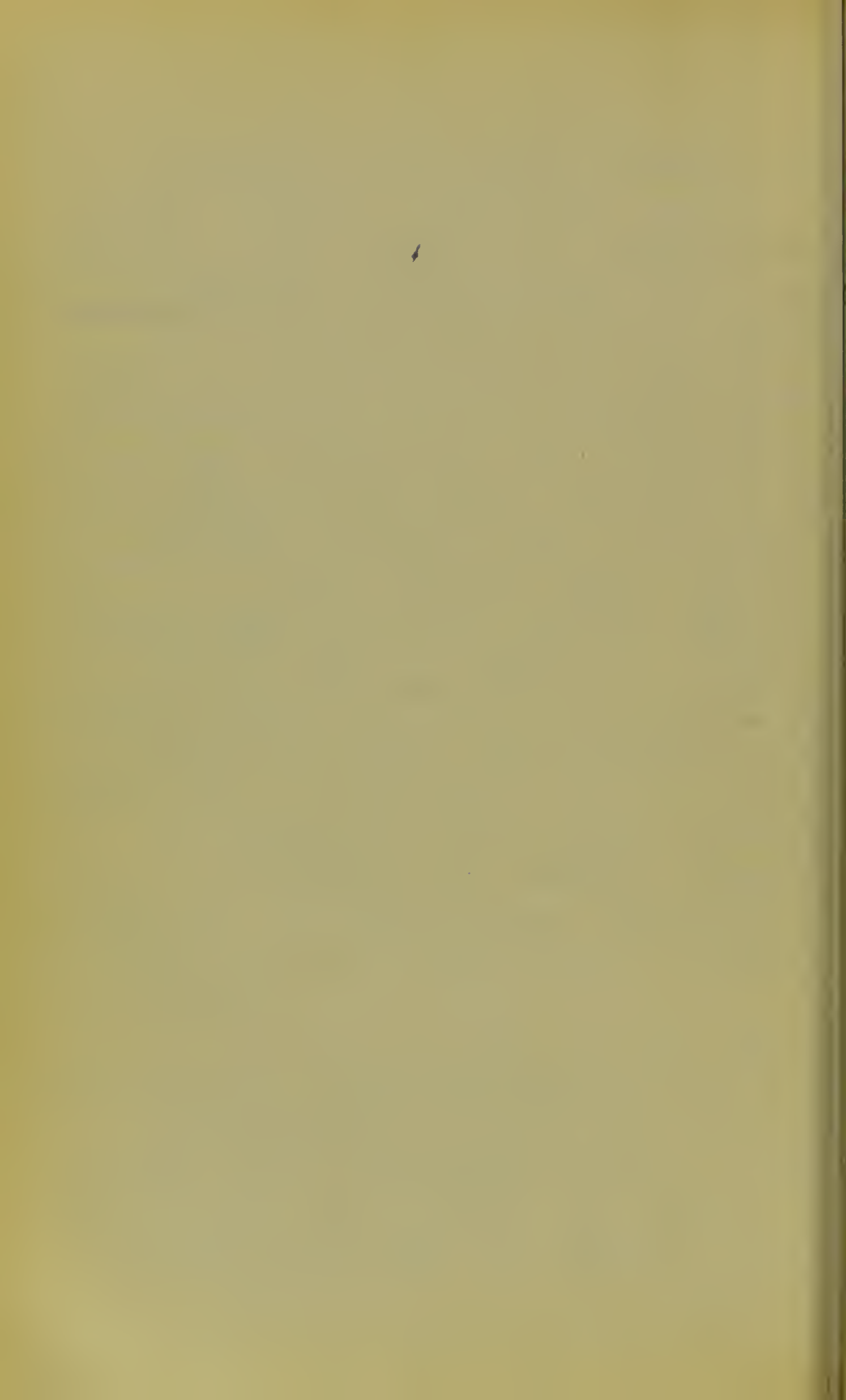


JUSTO-MINOR

The head bones are movable -
∴ head moulding takes place -
On side of newly born child's head
you find a swelling ~~on its head~~
(the caput succidanum) - Due to
distention of the capillaries
resulting in a certain amount
of oedema - May have ecchymosis -
Generally found ~~at~~ on that part
of the head that lies nearest
to the ant wall of the Pelvis
when in the parturient canal -
Due to pressure above the line of
the girdle of contact - It takes
place where the pressure is
least (same as oedema &
ultimate ecchymosis in cupping
glass i.e. where pressure is relieved) -

If the head lodges for some time
at the outlet a secondary
caput succidanum will form
the center of which is about the
back part of the sagittal
suture -

The pres: being abnormal will make



The position of the caput succ: abnormal

~~Head Moulding~~ Shearing -
one parietal bone may overlap the
other - (Frontal may overlap parietal)
The parietal bone that overlaps
the other is always the one that
lay towards the ant wall of
the parturient canal. It is the
ant parietal bone that undergoes
the change in L O A -
After the rotation is completed
& head being driven against
the floor the frontal region is
still subjected to pressure -
hence the parietals overlap
the frontals -

MANAGEMENT OF NATURAL LABOUR.

NATURE of the ACCOUCHEUR'S DUTIES in general.

OBSTETRICAL ARMAMENTARIUM.

EXAMINATION of PATIENT, and NATURE of INFORMATION to be gained.

THE LYING-IN ROOM.

THE OBSTETRIC POSITION.

Various habits of different countries.

FIRST STAGE—Rules as to its management.

SECOND STAGE—Rules as to its management.

Duties of Accoucheur after the Child is born.

THIRD STAGE—Two extremes of Practice, Active and Expectant.

Rules as to its management.

Subsequent duties of Medical Attendant.

Management of Natural Labour.

Clean hands, kind heart & cool head -

Catheter, needle, sutures, pocket case
& scissors, hypodermic syringe, ergotine,
opiate, chloroform, antiseptic tablets,
tube for douche, thymol jelly etc

Begin PV during pain but continue it
after pain.

PV tells us: —

1. If the patient be pregnant.
2. If " " be parturient.
3. The progress of the labour.
4. The presentation.
5. The position (by feeling the sutures).

The lying-in room should be the
best in the house & must be
well ventilated & above all
must not be adjoining a bath
room or water closet -

There is plenty of boiling water
+ boiled water that has
been cooled & so sterilized -

The best parturient position is
patient lying on left side +
knees drawn up -
For Rules of 1st Stage see back 12 pages
Management of Second Stage
General Rules

1. Continue to enforce all the rules
stated in the Management of the
first stage as to Diet, Ventilation
+ Position -
2. Examine as soon as possible
after the rupture of the membranes
in order to ascertain if any part
has prolapsed - Cord or Hand
3. Repeat the examination
occasionally to ascertain the
progress of the Head
4. Palliate distressing symptoms
as Pains in back
Cramps or spasms in lower limbs.
5. Have the limbs separated when
the head descends to the outlet -
6. Support the Perinaeum
7. Make the head pass through
the outlet in that form

in which it presents the smallest
ovoid, and direct the head + body
out in the axis of the outlet

3. after the Head is expelled, ascertain if the Cord is round the neck if so free it.

7. Leave the expulsion of the body as much as possible to the uterine action alone

10. Guard + support the Perinaeum during the passage of the Body + Shoulders -

Duties of the Accoucheur directly after the child is born

Draw the infant from underneath the bed clothes and arrange the latter so as to prevent access of cold air to the mother -

2. Pass hand over the Abdomen to ascertain { If there is a second child
 { If the Uterus is contracted

3. Place the ligatures on the Cord & divide between them -

See whether your patient requires
a stimulant -

Normal 'after pains' should
be present - but not
continuous.

Subsequent Duties of the Medical Attendant.

1. Apply a warm cloth to the pudenda -
2. Place a binder on the Pelvis and Abdomen
3. Remain with the patient for at least an hour -
4. Before leaving her ascertain:-
 - (A). If the Uterus is contracted
 - (B). If discharge not too profuse
 - (C). If no marked constitutional symptoms -
5. Guard against the patient leaving the horizontal position or being exposed to mental or bodily excitement -
6. Leave injunctions to be called if faintness and rigors or continual pelvic pain supervene:

ANÆSTHESIA IN MIDWIFERY.

HISTORY.

OBJECTIONS TO ITS EMPLOYMENT.

VARIETIES OF ANÆSTHETICS.

CHCl_3 , ether, A.C.E.

DANGERS; PRECAUTIONS.

RULES FOR THE EXHIBITION OF CHLOROFORM IN PARTURITION.

January 19th - 1897. Tuesday

Anæsthesia in Midwifery

THE STUDENT.

171

An Historic Occasion.

THE fiftieth anniversary of the first induction of Anæsthesia in Obstetrics occurred last Tuesday. By a strange coincidence it would have fallen to Professor Simpson in the ordinary course of his work to lecture on Anæsthesia on that very date, but in honour of the occasion he delivered a special lecture, which was listened to by a large and distinguished audience. Besides a crowd of Professors and medical men present, we noticed the Principal (Sir William Muir), Sir James Russell, the Rev. Hugh Black, and Mr Thomas M'Kie.

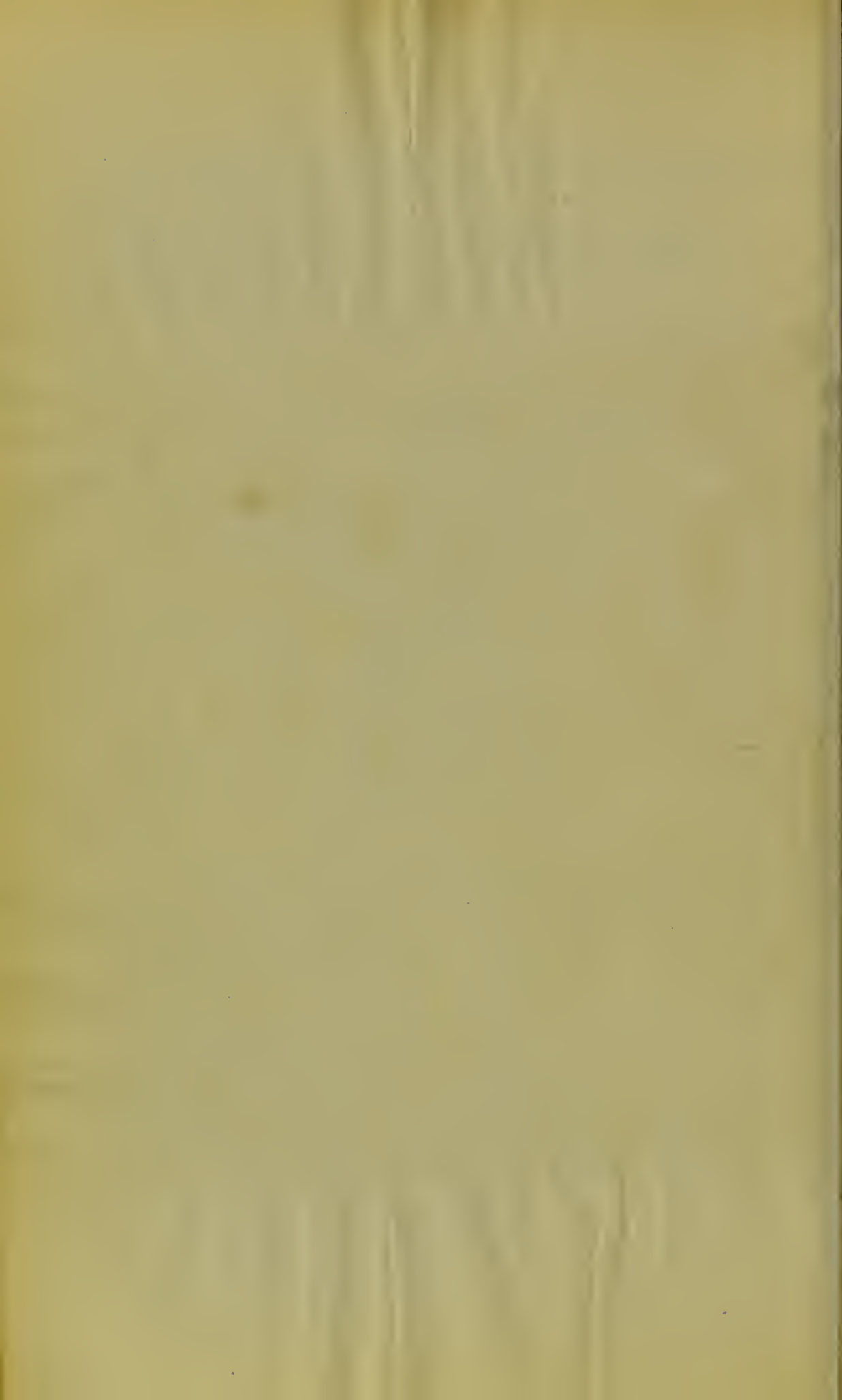
Professor Simpson gave an interesting account of the life of his great relative, Sir James, and told how once as a student he left the operating theatre in the Infirmary, unable longer to witness the sufferings of a woman on the surgeon's table. He half thought at this time of giving up Medicine—as he could not bear the sight of others in pain. Fortunately, however, for humanity, he stuck to his post, and ultimately graduated at the age of eighteen.

The lecturer then went on to tell how Sir James recognised what an advantage might accrue to his patients from the use of sulphuric ether to produce anæsthesia during labour—the drug having already been used in America and London in ordinary surgical practice.

On the 19th of January 1847, he anæsthetised with ether a patient with a contracted pelvis, and succeeded almost beyond his expectations. He, however, thought that nature might have a better anæsthetic agent than ether, and set about a long series of experiments, which resulted in the following October in the discovery of the anæsthetic properties of chloroform.

The lecture, which was illustrated by a large number of historical “productions,” was delightfully interesting, and was listened to attentively; and the impressive reference—which did credit to the lecturer—to Sir James Young Simpson’s “greatest discovery” was heard in solemn and appreciative silence.

On the conclusion of the lecture, Sir William Muir called for a vote of thanks to Professor Simpson, which was vociferously given.



RULES for the EXHIBITION of CHLOROFORM in PARTURITION

1. Begins when the patient begins to complain of pain, generally towards the end of the first stage
2. Always inculcate perfect quietness around the patient especially when first giving Chloroform
3. Give it only during the pain and withdraw it during the interval.
4. When given during the first stage the anaesthesia need not be deep except when the sufferings are great or symptoms of anaesthesia are disagreeable -
5. As the second stage progresses make the anaesthesia so great as to destroy all sensibility -
Do not allow the urinary bladder to be over distended but do not awaken the patient to empty it.



7. Do not restrain the patient to one position
8. Be sure to remove the Chloroform as soon as the child is born -
9. Do not awaken the patient artificially -

Chloroform is better than ether in midwifery. Handier, quicker + safer -

It is practically perfectly safe -

The pulse + respiration must be watched by the practitioner -

Be a fearless + you will be an admirable chloroformer -

If patient is ~~to~~ put under too far use ordinary remedies -

MORBID PARTURITION.

LABORIOUS LABOURS—

Definition. *Exceeds 24 hrs. - Present: & pos normal*

but Due to fault in the Powers, Passages, or Passenger.

Sub-divided into (1) Tedious or Lingering, (2) Instrumental Labours.

1. Natural
2. Laborious *& Lingering*
Instrumental *Destructive*
Dangerous
3. Præternatural *Breech.*
Trunk.
4. Abnormal *Maternal Complications*
Fœtal Complications

Laborious Labours

are still head presentations but due to faults in Powers or Passages or Passenger - or all three -

Subdivided into

- a.) Tedious or Lingering
- b.) Instrumental

d. Lingering Labour

May linger in first stage i.e. if it goes on 12-14 hrs after as has begun to open up -

Causes

- a Patient may be weakly
- b Pain may be weak + short
- c Uterus may be at fault

Dangers

1. A powerless labour may follow the power being exhausted.
2. Haemorrhage
3. Irritation & inflammation by constant pressure of head.
4. Uterus becoming thinned & may be lacerated

LINGERING LABOURS.

FROM PROTRACTION OF FIRST STAGE.

Definition. Dangers.

CAUSES.

I. Faults in *Powers*.

Rarity in First Stage.

II. Faults in *Passages*—

1. Rigidity of lips and neck of uterus.

Varieties. Constitutional ; Inflammatory ; Spasmodic ; Organic.

Diagnosis. Prognosis.

Treatment : constitutional and local.

2. Occlusion of Os Uteri.

Causes. Termination.

Treatment.

3. Oblique position of Body of Uterus or of Os.

Pendulous belly.

Treatment.

4. Wedging of a fold of cervix between head and pelvis.

Seat. Frequency. Causes.

Diagnosis. Treatment.

5. Large size of Pelvis or morbid relaxation of Soft Parts.

5. ~~Lab~~ Liability to fever
6. Patient Anxious
7. Death of Child

I Faults in Powers in 1st Stage
Rare in this early stage -

II Faults in Passages in 1st Stage
Cervix may resist or be rigid
or may be oblique, or occluded,
or impaction or fold -
(1) Rigidity of neck + lips of Uterus -
Constitutional tissues firm, dry,
+ unyielding - especially
seen in elderly primiparae
(above 35) - common at ext. os -
Inflammatory maybe even cicatricial -
generally seen in 2nd stage -
cervix may have been lacerated
or torn, or have had
endocervicitis + have been
treated by AgNO₃
Spasmodic mus: fibres of os uterine
contract in spasm. ^{common at} internal os
Organic Fibroid, cyst, cancer
etc of the cervix -



Diagnosis

made in early part of first stage by P V examination -
lips of os feel like parchment.
margin as big as florin for
10 - 12 hrs - Thickened round
the margin -

Treat

1. Constitutional

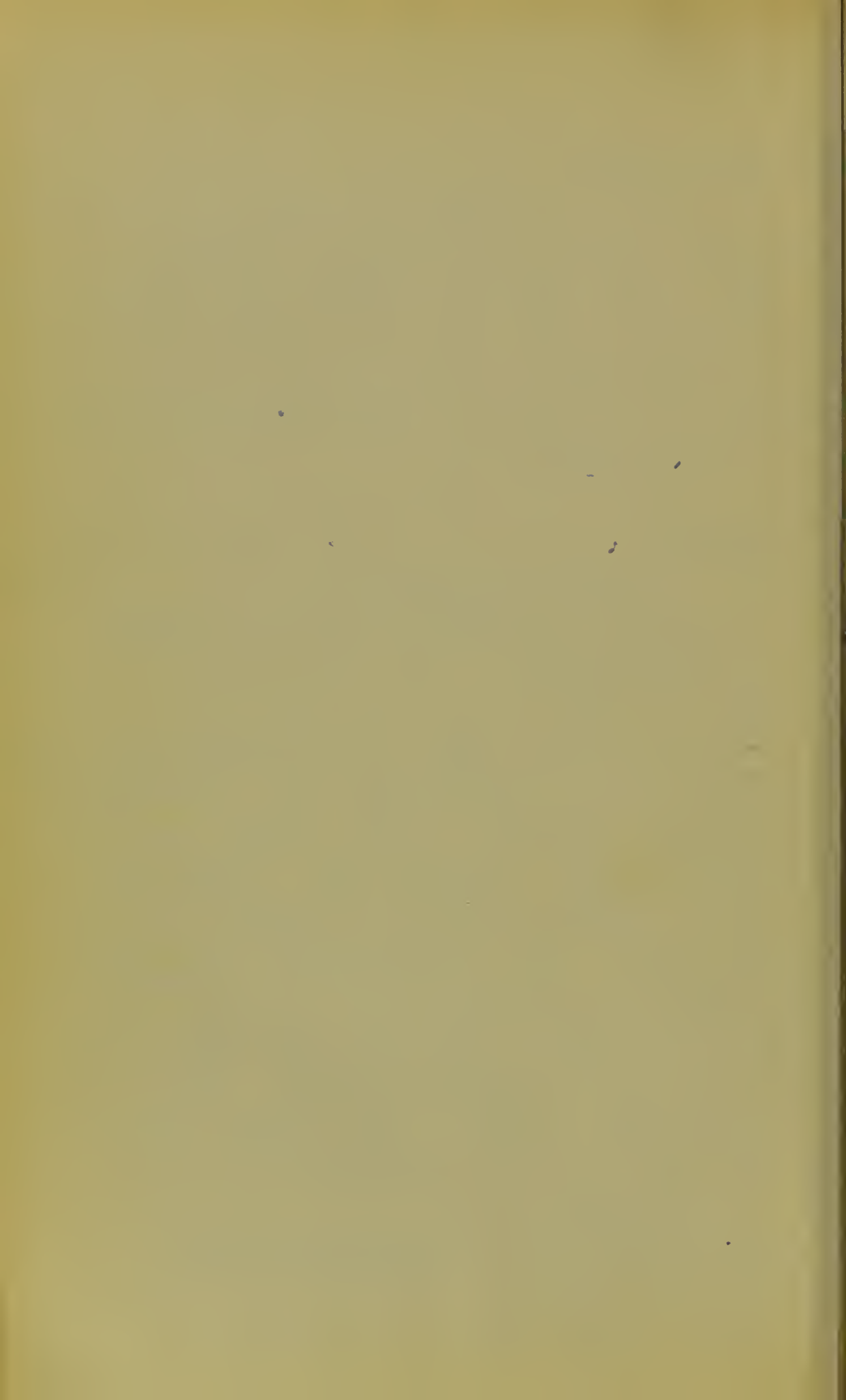
Blood letting used to be
adopted -

Some kind of nauseum may
be given - Ipecac or Tart: of Sb -
Warm bath has been used -
Sedatives such as opiates
have also been used but
should be reserved until
the pains become irregular -
Spasmodic rigidity may be
relieved with chloral gr XV-XX.
repeated in 3 - 4 hours -

2 Local

Belladonna suppository -
Cocaine ~~to~~

Warm injections which act



by relaxing the tissues + strain the
uterus -

The os may be gradually
dilated by the fingers, during
the pain - He may dilate
up to a 5/5 piece + then
it will go on by itself -
artificial dilators may
have to be used - Champetier de
Ribes.

2. Occlusion of Os Uteri

i Conglutination of the lips
which is common

ii organic adhesion between the
lips - this is rare -

Patient has suffered from
endocervicitis + actual cautery
has been applied - These
raw surfaces have been left -
Conception has occurred -

No Menstruation taking place
organic union is brought about -
Treat by scratching through the
cerv. tissue with point of bistoury.

* may have to scarify
before pushing back.

3. Oblique Position of body or of Os
seen in pendulous belly -
Ant wall of lower seg + ant
lip of os remaining undilated -
a retroflexion that has not
become 'undone' will also give
rise to this oblique position.
Treat try + bring ~~cavity~~ ^{of cervix} of uterus
into proper line of canal

4. Wedging of a fold ^{of cervix} between head + pelvis
seen in xparae with above -
Also in narrow pelvises -
Diagnose by examination -
inspection will help -

Treat by keeping up pressure upon
the displaced cervix during
the pains & between the pains
* push it up between the child's
head + the sym: pubis -

5. Large size of Pelvis or morbid
relaxation of Soft Parts
Large pelvis often gives p.p labour,
but often under the action of the
uterus the head is slung into the

III. Faults in Ovum. *in 1st stage causing lingering labour.*

1. Over-distention of uterus by liquor amnii: Hydramnios.

Symptoms, Treatment.

2. Praeternatural Toughness or Adhesions of Membranes.

Effects. Treatment.

3. Premature Rupture of Membranes.

Diagnosis.

Dangers. Treatment.

cavity of the cervix without any expansion -

III Faults in Passengers

Over distention of uterus by
lig amnii = Hydramnios -

~~Treat by rupturing membranes -~~

Pains come irregularly - May have
Edema in lips or limbs -

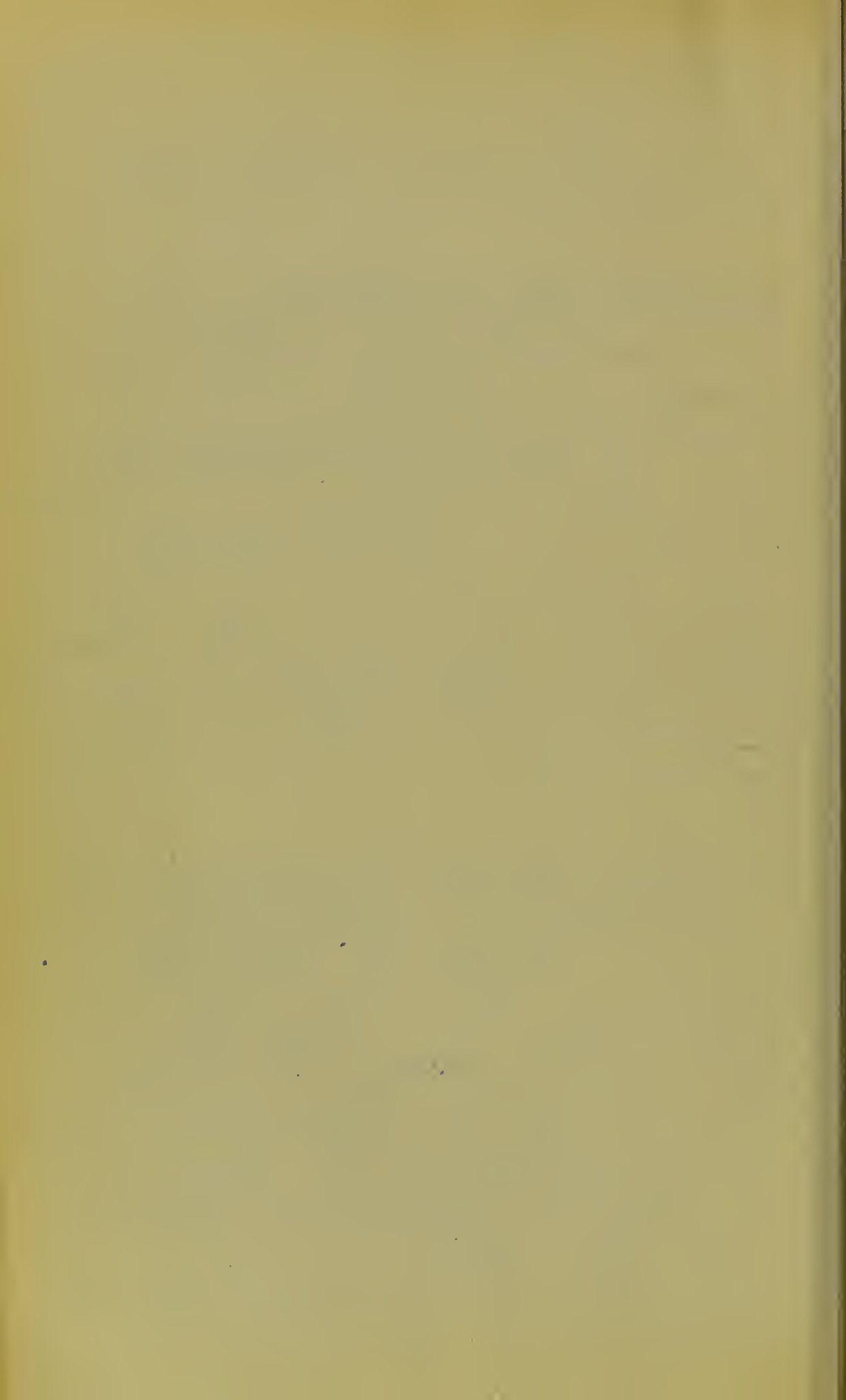
Treat by puncturing membranes
& drawing off some of the excessive
lig amnii with trochar & cannula -
or just rupture them where
you can -

Præternatural Toughness or Adhesions of Membranes

This may really be that the
membranes are not properly
separated from the uterus -

Then the bag of membranes may
be only formed of the Amnion,
or composed of Amnion & Chorion
alone etc etc -

Treat pass your finger round
the margins of the Os - & try



to help the membranes to strip off

3. Premature Rupture of Membranes

If the nurse tells you the waters have escaped it may have been

1. Urine

2. False Waters, fluid come away accum: between Chorion & Amnion

If it be the true waters that ~~the~~ have come away the labour will be tedious. This may lead to irregular contraction of the uterus & the foetus dies -

Especially common in twins. You may have to introduce a Barnes bag or Champetier bags to bring about artificial expansion of the OS.

Treat Nausea - Warm douches etc to soften canal

FROM PROTRACTION OF SECOND STAGE.

I. Faults in *Powers*.

1. Inefficiency of the Accessory Powers.

2. Inefficiency of the Uterus itself.

(a) from spasmodic contraction,

(b) „ general inertia.

General Rules of Treatment.

Oxytocic Remedies :

Ergot : Uses and Dangers,

Rules for Administration.

Protraction of Second Stage

I Faults of Powers

1. Inefficiency of Accessory Powers -
abdominal muscles & diaphragm -
May be due to general & constitutional debility but this is a rare cause -
May be due to inertia of the voluntary accessory powers as in some cases of paralysis -
In this case the uterus is able to evacuate ~~the~~ its contents because the muscles of the floor of the Pelvis are also paralysed.

Sometimes patient can't use vol. muscles because of disease of heart, lung, or tumours in abdomen, over distended bladder - or ascites of abdomen -

Inefficiency of Uterus itself -

- i. Uterus has partial & irregular & spasmodic contractions -
"The hour-glass uterus"

May be met with in 1st Stage also.



also seen in Spurious labour -
Seen as result of reflex irritation
caused by too frequent examinations,
full bladder, or full rectum,
or sudden escape of large
quantity of Dig. Amnii, or
injudicious use of large quantities
of Ergot -

Pains are irregular, crampy,
& apt to be felt in the abdomen -
on Palpation of the abdomen
the hour-glass may be made
out during the pains - or may
always feel 'tonic' & never
relaxed between the pains -
The os uteræ may even contract
during a pain -

Treat by: Chloroform +
hypodermic of Morphia or
ii large dose of Chloral -

Before doing this see that
rectum & bladder is empty -
Let Patient sleep for six
to eight hours & rest the
Patient in body & mind -
On awaking probably the labour



will go on quite smoothly.

(2) from general inertia -

Sometimes Uterus is sluggish & feeble throughout the labour - The muscular fibres may be undeveloped. Fibroids may be in the walls. Uterus may be over distended with liq amnii, or an over large child or twins -

Commoner inertia arises during the progress of the labour -

- i. Due to sudden escape of a quantity of liq amnii.
- ii. Due to prolonged action - First stage being protracted
- iii. Due to too strong action in first stage, as in occlusion of os.
- iv. Due to Passive portion thinning & so pains get weaker
- v. Mental impressions. Nervous frights. Emotion etc.

Inertia is always more dangerous after the first stage is over -

Diagnosis. pains becoming shorter & pains have no effect on the head, they are also longer in recurring.

Rules of treatment in Lingerin
labours depending on the deficiency
of the Expulsive Powers.

Avoid or avert the general or constitutional causes that may lead to it

Remove any local or mechanical causes that may produce or maintain it

Be careful to preserve the patients strength + spirits.

If the accessory expulsive powers are at fault use abdominal bandage and change position.

If simple uncomplicated inertia excite the organ to renewed or increased action by electricity or Galvanism, Abdominal friction, compression + bandage, stimulating clysters or purgatives, Reflex irritation, Direct irritation, or
oxytotic remedies as: -

Borax, Cinnamon,
Cotton, Pilocarpin,
Indian Hemp, Ergot of Rye, *
Lumine, Saffron, Pennyroyal



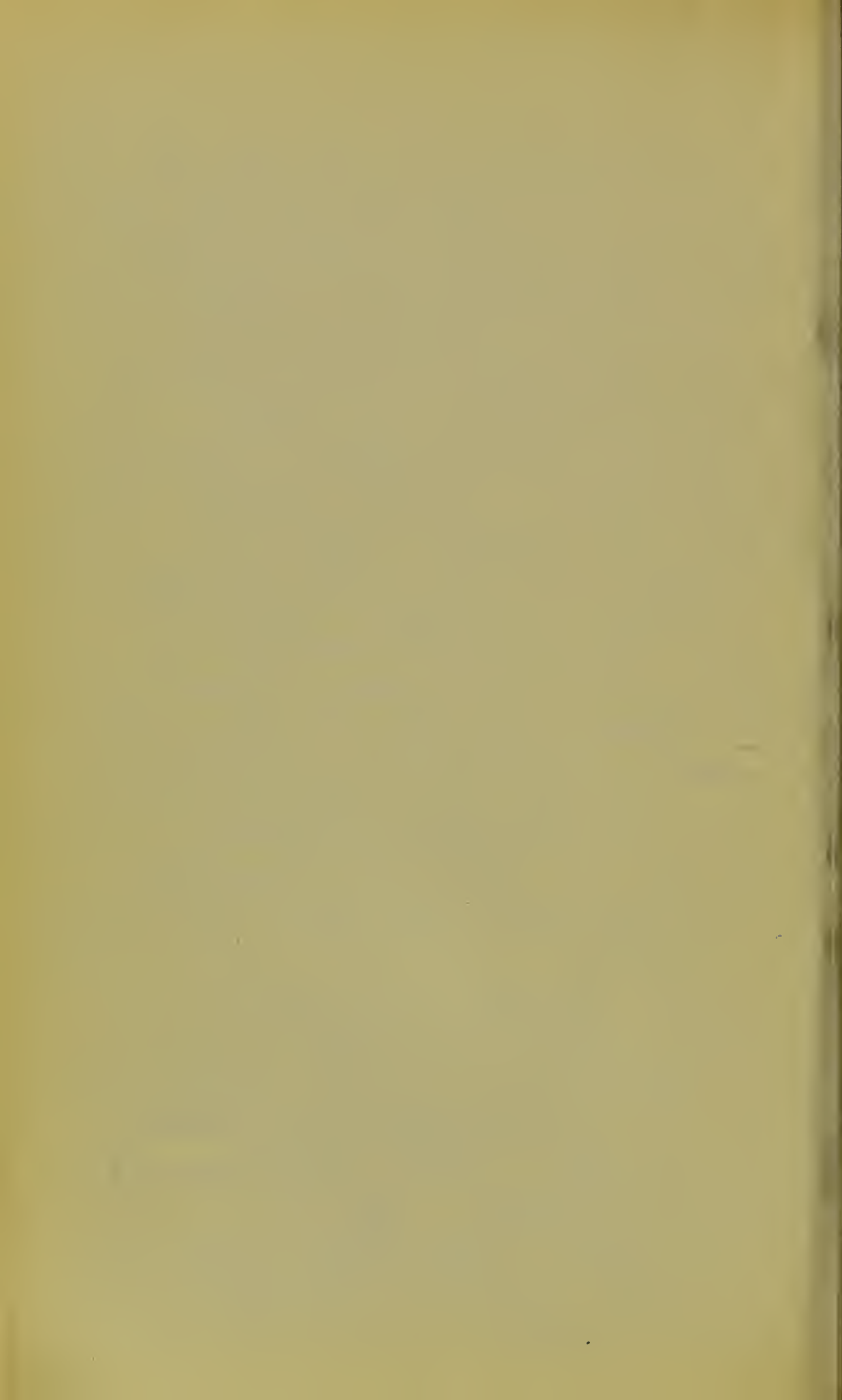
of Ergot which is by far the best
the power or active principal depends
on the time of year it is gathered -
most of it present in July + August -
none at all in May + June -

Secale Cornutum or ergot has
two active principals Ergotin
+ Cornutin - Both these act
about the same efficiency. But
Cornutin brings about the
involution of the Uterus
sooner or at an earlier
date than ergotin - Cornutin
not only sets up contraction
but a continuous state of
activity or tonic retraction -

∴ Dangerous to give it early
in labour -

The best effect of ergot is in
separae just as head is passing
over the perinaeum - This
does away with post-partum
haemorrhage -

1. Powdered Ergot in hot water
or Fresh Infus + Carminative
may be given.



Liq Extract Zn

Hypodermic pellets, tabloids, or
solution - 1 gr in m4.

Ergotomin m5

We ought to have an official
prep of Cornutrin.

II. Faults in *Passages*—

1. Rigidity and contraction of Vagina or Vulva :

Due to simple Undilatability, Congestion or Inflammation,
„ Malformations, Rigidity of hymen, Cicatricial
contraction.

Rules for Treatment. —

2. Distended Colon or Rectum.

3. Hernia of Intestines within pelvis.

4. Distended Bladder.

5. Calculus in Bladder or Urethra.

6. Ovarian Tumours.

Rules for Treatment.

7. Other Tumours of the soft parts.

Tumours of Fallopian Tube and Parovarium ;
Fibroids, Polypi and Cysts of Cervix and Vagina ;
Inflammatory, Haematic and Malignant Deposits ;
Tumours of Labia.

Rules for Treatment.

8. Abnormal Pelvis.

II Faults in Passages in Lingering 2nd Stage

Rigidity + contraction of vagina
peraeum + vulva.

May be constitutional. When head meets pelvic floor the floor becomes rigid. Seen in premature labours, elderly women, muscular women, constitutional rigidity -

May be small orifice of vagina, or narrowed by practically imperforate hymen, irritating injection etc may narrow the canal by cicatricial contraction also traumatism of many kinds.

Treat i. warm douches + unguents
ii. wait + see if it won't dilate naturally -
iii cut with knife with several small notches the resisting band

Distended Colon or Rectum -
History of constipation -



Make examination PV + P Rectum -
Give soap + water clyster or
if that won't do grub it out
with your fingers

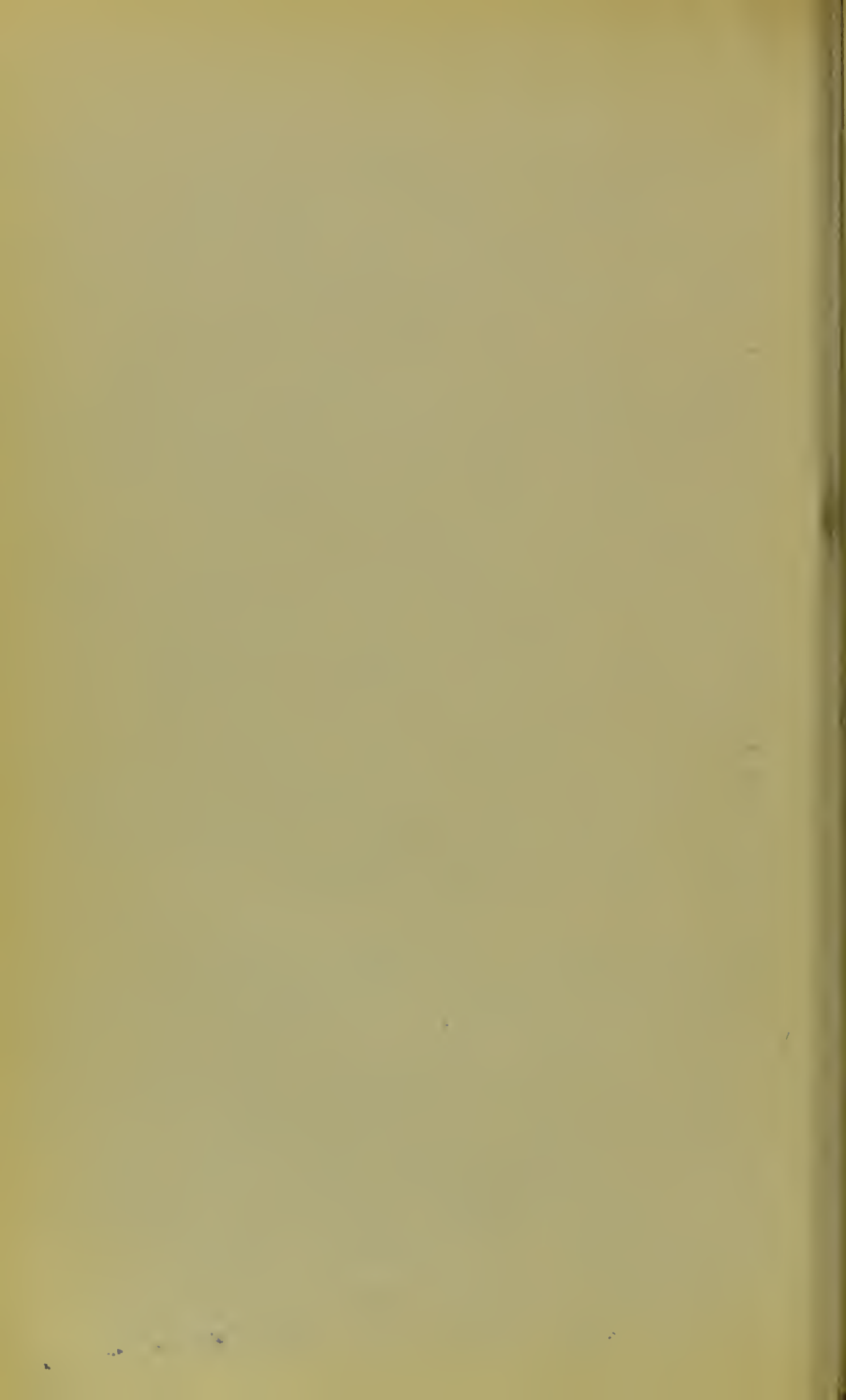
Enterocoele or pelvic displacement
of loops of bowel into pouch of
Douglas - This is a Hernia.

i. Finger in rectum
Treat Put patient in knee elbow
position - finger in vagina +
thumb in rectum + try +
push back -

If you don't at first succeed
try, try, try forceps to quickly
get the head past -

Distension of Bladder -

1. Reflex action on Uterus so that
contractions become less effective
2. Hampers abdominal muscles -
when abdominal muscles ~~have~~
are contracted patient suffers
discomfort \therefore don't do it.
- i. outline seen on inspection
- ii very sensitive on Palpation
- iii Catheter (gum elastic male) clears up
diagnosis.



(bladder in vagina)

Cystocele, prolapse of bladder into pouch of ^{1st} Douglas & other displacements are noted -

5. Calculus in Bladder or Urethra

Remove such calculus -

Try i To push calculus up, back into bladder -

ii Dilate urethra & extract

iii Cut open bladder wall & extract.

Ovarian Tumours

① If the tumour sufficiently loose push it upwards above brim -

② If This is impossible & the tumour is small & compressible leave the case to nature - avoiding long delay or pressure -

③ If instrumental aid required and tumour not very large, use forceps or turning

④ If not space for forceps evacuated the tumour (if any fluid in it) by puncture or ~~small~~ incision & then trust to natural efforts or forceps

Fibroids tend to make
the presentation abnormal

- ⑤. If tumour is too large or solid
Embryulcia or Laparotomy -
- ⑥. Occasionally produce premature
labour

Recognise condition as early as
possible -

7. Other Tumours of the soft parts.

Rules nearly the same as for
Ovarian tumours -

1. Wait the efforts of Nature
and aid them by relaxants
and compression or changing
the position of the tumour.
2. If the obstruction cannot be overcome
then gain
 - (a) space - by opening the tumour
if there is any chance of it
containing fluid -
 - (b) If the tumour consists of recently
effused blood either do not
open it till it has had time
to coagulate - or apply forceps
immediately after opening it.
 - (c) If the tumour is solid &
removable extirpate it.

8. Abnormal Pelvis.

A. Well-formed, but abnormal in size—

1. Abnormally large—aequabiliter justo major,
 2. „ small—aequabiliter justo minor.
- (a) Masculine, (b) feminine, (c) puerile form.

Normal

4-5-4½

B. Deformed—

1. Individual peculiarities,
(a) Funnel-shaped, (b) deep, (c) shallow.
2. Obliquely contracted.
3. Transversely contracted.
4. Antero-posteriorly contracted.

Influence of Rickets.

5. Compressed Pelvis.

Influence of Malacosteon.

6. Spondylolisthetic Pelvis.

7. Pelvis distorted by morbid growths or injury.

Pelvic Measurements

A EXTERNAL

Interspinoous

9"

Intercristal

10"

Intertrochanteric

11½"

Conjugate (Baudeloque) = External
Measurements between spine of
the last Lumbar vertebra +
symphysis Pubis =

7½"

B INTERNAL

Internal Diagonal

Conjugate =

4½"

3. If the obstruction cannot then be removed use forceps, turning, Embryulcia, or Caesarean section, according to the existing circumstances.

B Abnormal Pelves

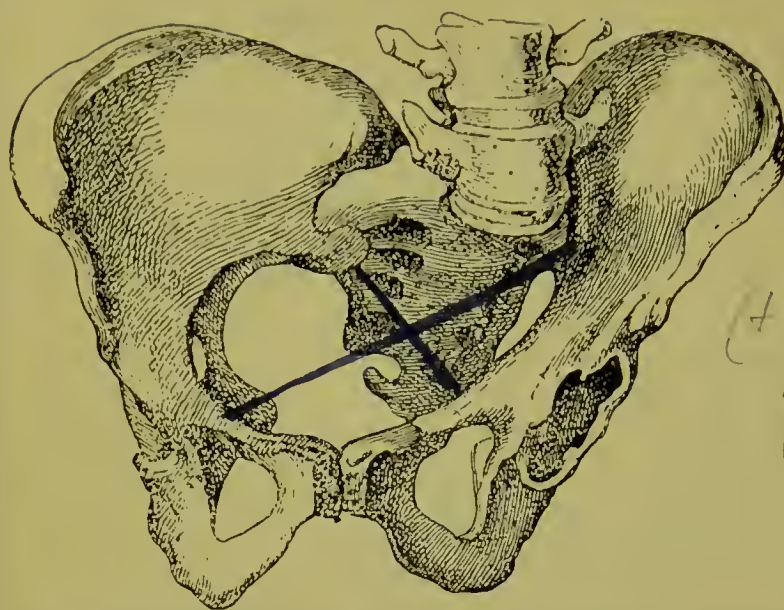
A Well formed but abnormal in size

1. Iusto major all diameters relatively right but all large - Found in large women - sometimes called Pelvis gigantea -
2. Iusto Minor all diameters relatively right but all small. Found in three forms :-
 - (a) Masculine type in small undeveloped women.
 - (b) Feminine type (but smaller than normal)
 - (c) Infantile, bones small & badly developed.

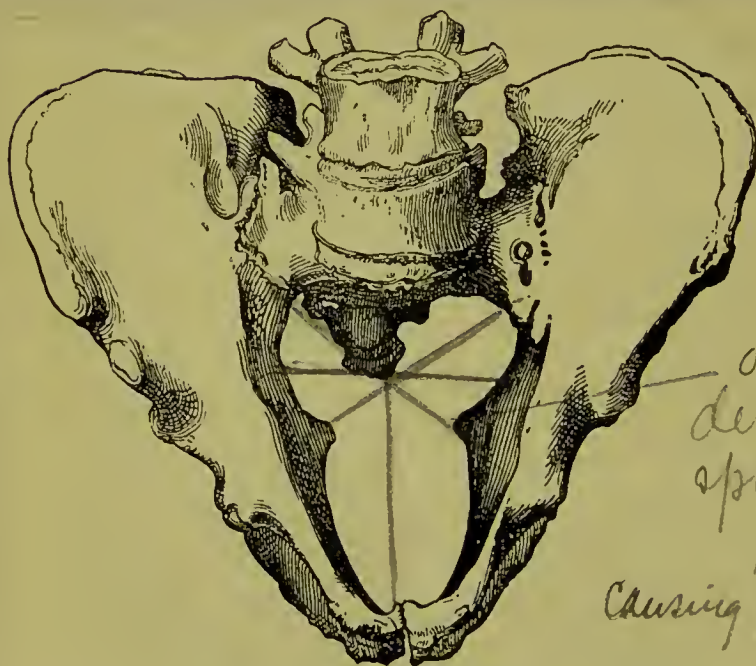
B. Deformed

1. Individual peculiarities
 - (a) Funnel-shaped - normal brim but narrows as you travel down the canal in all its diameters.

Naegele pelvis



Ankylosis
 of one
 sacro iliac
 joint
 (+ non develop
 of one wing
 of sacrum)



Over
 developed
 spines of
 ischium
 Causing further narrowing.

029

Roberto pelvis

Also seen in Kyphotic
 pelvis of hunchback

(b) Deep unusually deep -
May-be six sacral vertebrae
in this case -

(c) Shallow segments of sacrum
unusually short -

2. Obliquely contracted
One or other of the oblique
diameters shortened. In cases
where scoliosis is present (lat
curvature of spine) - or same
result in case where in early
life patient has lost use of
one limb by hip joint
disease or amputation -

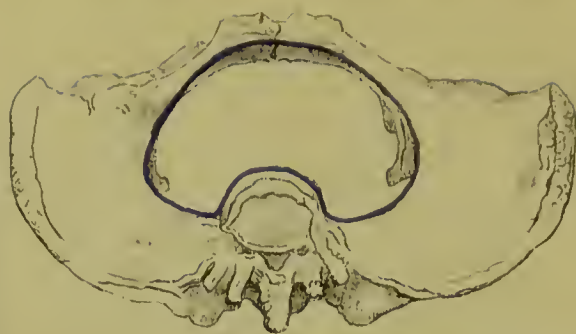
Naegle pelvis

one ~~atrophy~~ ~~right~~ oblique diameter
lengthened + the other shortened.

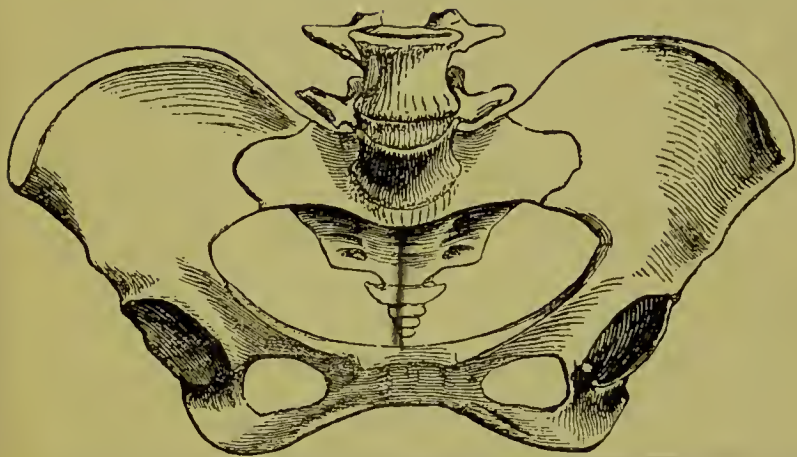
3. Transversely contracted

Roberts Pelvis - Like a double
Naegle. - Conjugate = longest diameter.
Due to double sacro-iliac synostosis.
Also seen in pelvis of hunchback.
Called Kyphotic pelvis is elongated
in conjugate but narrowed in

FLAT OR RICKETY.



Flat or Rickety Pelvis



RICKETY



NORMAL

transverse diameter -

The spines of the ischium may be over developed + project into the Pelvis + ~~so~~ narrow it -

4. Antero-posterior contraction Flat Pelvis

Sacrum projecting forwards at the brim - In simple flat pelvis the contraction passes through the ~~pelvis~~ whole pelvis from brim to outlet.

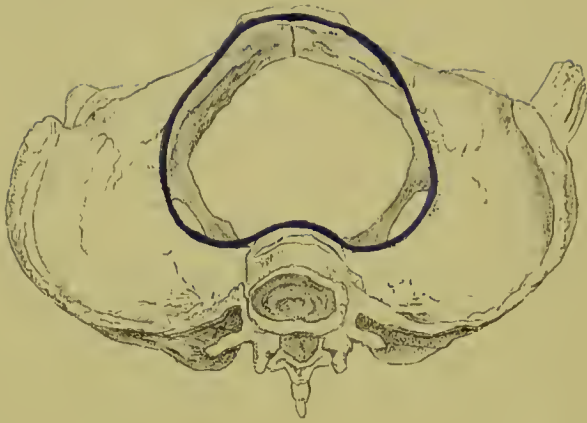
Rickety Pelvis

Flattening most pronounced at the brim - Conjugate much lessened + transverse increased either absolutely or relatively -

Oblique diameters may be somewhat shortened -

Sacrum flattened (on section) runs downwards + straight backwards + from side to side. At outlet the transverse widening of the pelvis allows much space between tuber ischi.

NORMAL



JUSTO MINOR



see back.

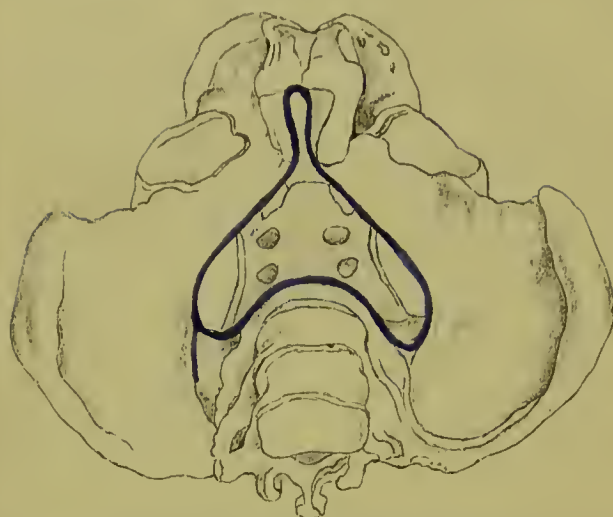
Outlet is thus large - Conjugate here is wide enough
The acetabula look more forwards than in normal pelvis -
In two rickety pelvis the diameters may be very different -
There is only say $\frac{1}{2}$ " between interspinous + intercrystal diameters - They may be even the same. ~~as in~~ in pronounced cases the interspinous diameter may be longer than the intercrystal.

Rickety women may have atypical rickety pelvis

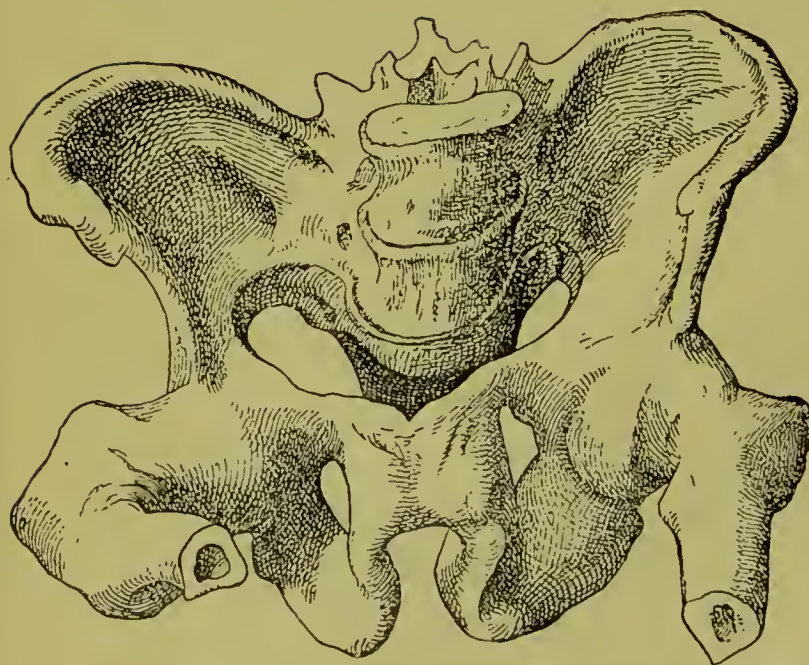
- i. aequabiliter Justo Minor
- ii. Flat
- iii. Undersized + Flat
- iv. Pseudo ~~Malacic~~ Osteo - Malacic
- v. Mixed deformations due to lateral curves etc of spine - thus complicating with naegeles'

Compressed Pelvis
Crushed - Due to softening of the bone -

MALACOSTEON



Malacosteon



The osteomalacic pelvis is produced in adult life (The rickets in infancy)

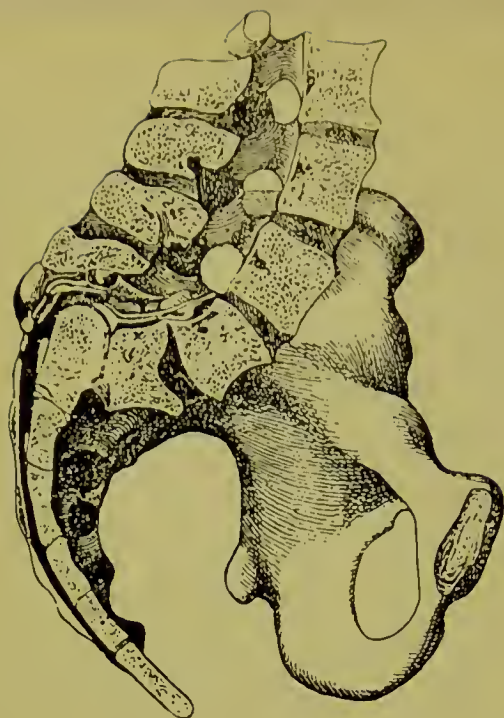
Especially seen coming on in xparae - Very rare in this country now-a-days - In some colonies it is almost common - Some xparae has vague pain going on for some months & in subsequent labours advancing difficulties in each additional labour -

Suggested cause

Disease of the ovaries -

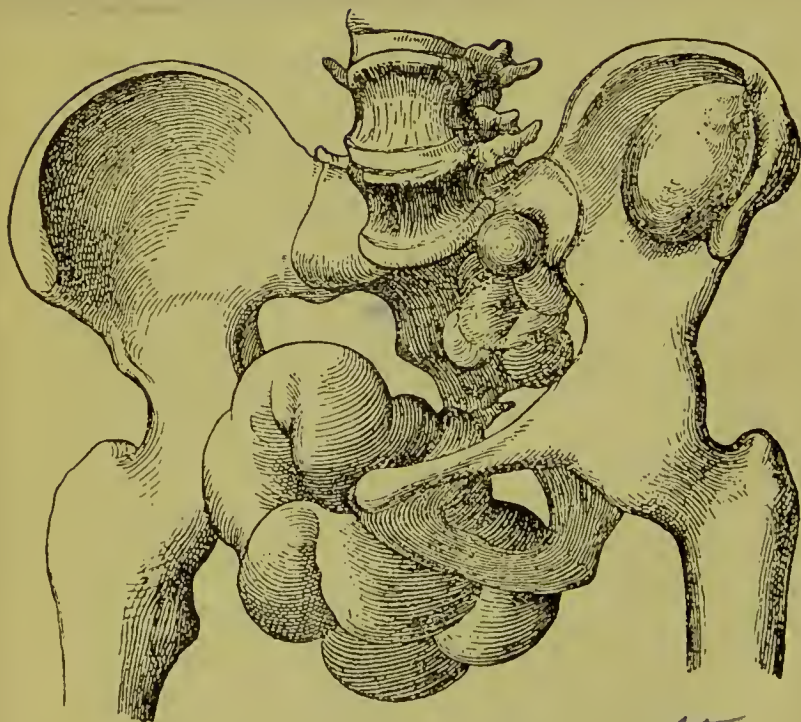
(Removal stops its advance)

Earthy salts are removed from the bones & the patients weight crushes the pelvis - Iliac fossae becomes scoop shaped - Brim is stellate - rays run towards the three joints of the Pelvis - Sometimes called the Beaked or Rostrate Pelvis - ~~the~~ Anatomical Conjugate may remain unaltered



031

Spondylolisthetic



028

Morbid Growths

but is of no avail for the entrance
of the head so is not an
available conjugate -
The available conjugate is only
 $1'' - 1\frac{1}{2}''$.

The transverse is not available -
In cavity the sacrum has become
folded together (coccyx + prom
of sacrum may nearly touch)
At outlet tuber ischii are approximated.
Diagnosis may be difficult -
Patient may say it is Rheumatism.

Spondylolisthetic Pelvis

Lower lumbar vertebrae fall
down in front of the prom: of
the sacrum + produce
contraction of the conjugate -

Distorted by Morbid Growths

Sarcoma

Exostosis

May spring from bone or articular
cartilage -

There may be a spine at the
brim of the pelvis - This is called

CÆSAREAN SECTION.

Classical Operation.

1. Opening Abdomen.
2. Incising uterus *in situ*, and extracting fetus.
3. Removal of placenta, and arrest of hæmorrhage.
4. Suture of abdominal wound.

Porro's Modification.

1. Abdominal incision.
2. Cutting into uterus while in abdomen, and removal of fetus.
3. Amputation of uterus and appendages, and formation of a pedicle.
4. Dressing of peritoneal cavity.

The Improved Modern Operation. (SANGER.)

1. Antiseptic treatment.
2. *Early* operation.
3. Uterus turned out before being incised.
4. Sutures at upper end of abdominal wound to be tightened, and so close in the abdominal wall under the uterus.

Disinfected gutta serena tissue placed under the uterus to prevent entrance of blood and liquor amnii into peritoneal cavity when uterine contents are septic.

5. Rubber tube to compress cervix and so prevent hæmorrhage.
6. Shock avoided by enveloping uterus in warm cloths.
7. Method of uterine suture to bring peritoneal surfaces in contact. Numerous sutures should be passed, not through entire thickness of wall, but entered between decidua and muscular coat.

Exact sero-serous suture for peritoneal coat.—"LEMMERT."

Minor Modifications.

MÜLDER.—Uterus brought externally, and elastic ligature applied, before being opened.

FALASCHI AND OTHERS.—Double ligatured the uterine end of the Fallopian tube to prevent future conception.

TAIT.—Extent of abdominal incision to admit hand only, uterus not drawn out.

Tubing round cervix.

Small hole in uterus so as to admit two fingers, there-after separating them, and so *tearing* uterus.

Fœtus extracted feet first.

American Operation—Gastro-Elytrotomy. (THOMAS.)

1. Incision on right side parallel to Poupart's ligament, and one inch above.
2. Incision down to peritoncum, not through it.
3. Peritoncum pushed from off the fascia.
4. Lateral vaginal wall reached.
5. Ureter removed out of danger.
6. Vaginal wall pushed towards wound by means of sound in vagina.
7. Vaginal wall nicked through, then torn as far as necessary.
8. Cervix directed towards wound.
9. Child extracted by forceps through cervix and through wound.

J. H. C.

The Spinous Pelvis

Pelvis may have been injured by
Fracture

May have ankylosis of coccyx
+ sacrum especially seen in
elderly + parae -

Presentations + Positions of Foetus as influenced by Abnormal pelvis

Narrowed or distorted pelvis
give rise to malpresentations -
even if we have a head pres:
it will nearly sure to be a
bad head pres: "face" etc -

Also tends to turn good or
fairly good pres: into bad ones -
Prolapsed cord nearly always
seen in deformed Pelvis.

Normal rotation of the head
may be interfered with -

On the Mechanism of Labour

Justo Minor small pelvis but
ordinary head - ∴ Head flexion
must be very well marked



Justo Minor
head Moulding



Flat

or head can't pass at all -
Rotation as usual -
Head will be delayed at the
outlet + Justo Minor moulding
(sugar loaf) will be marked -
Of course in worst cases
operative interference has to
supervene -

Flat Pelvis

Head lies in direct transverse
diameter (cannot lie in *Oblique*)
Then one parietal sinks lower
than the other - Then broad
part of head passes to one
side + then syncephal dips -
Then the ordinary mechanism
takes place -

The foetal skull is deformed in
the bitemporal region by the
promontory of the sacrum -
or labour may be precipitate
The perinaeum is apt to be
ruptured -

Justo Major

Imperfect flexion occurs
because of lack of resistance -



Naegle

Slow internal rotation takes place on the pelvic floor -
2 Naegeles pelvis

Mechanism as in justo minor - @ Long diameter of head lies in longest oblique diameter of pelvis. + then normal mechanism goes on normally - Flexion is extreme + moulding is very well marked, as in justo minor - caput succedaneum over occiput - Occipital + frontals driven under parietals.
In Kyphotic Pelvis

Mechanism may be as in normal pelvis till head reaches outlet. Then labour may come to a standstill - The degree of deformity of the pelvis depends on the nearness of the hump to the sacrum - You may be able to deliver head with forceps - or may have to break it up -



Spondylolisthesis

In Spondylolisthetic
The projecting L vert takes the place of the prom in flat pelvis - head lies in transverse diameter as in flat pelvis - as a rule the available conjugate is so small that no mechanism can take place

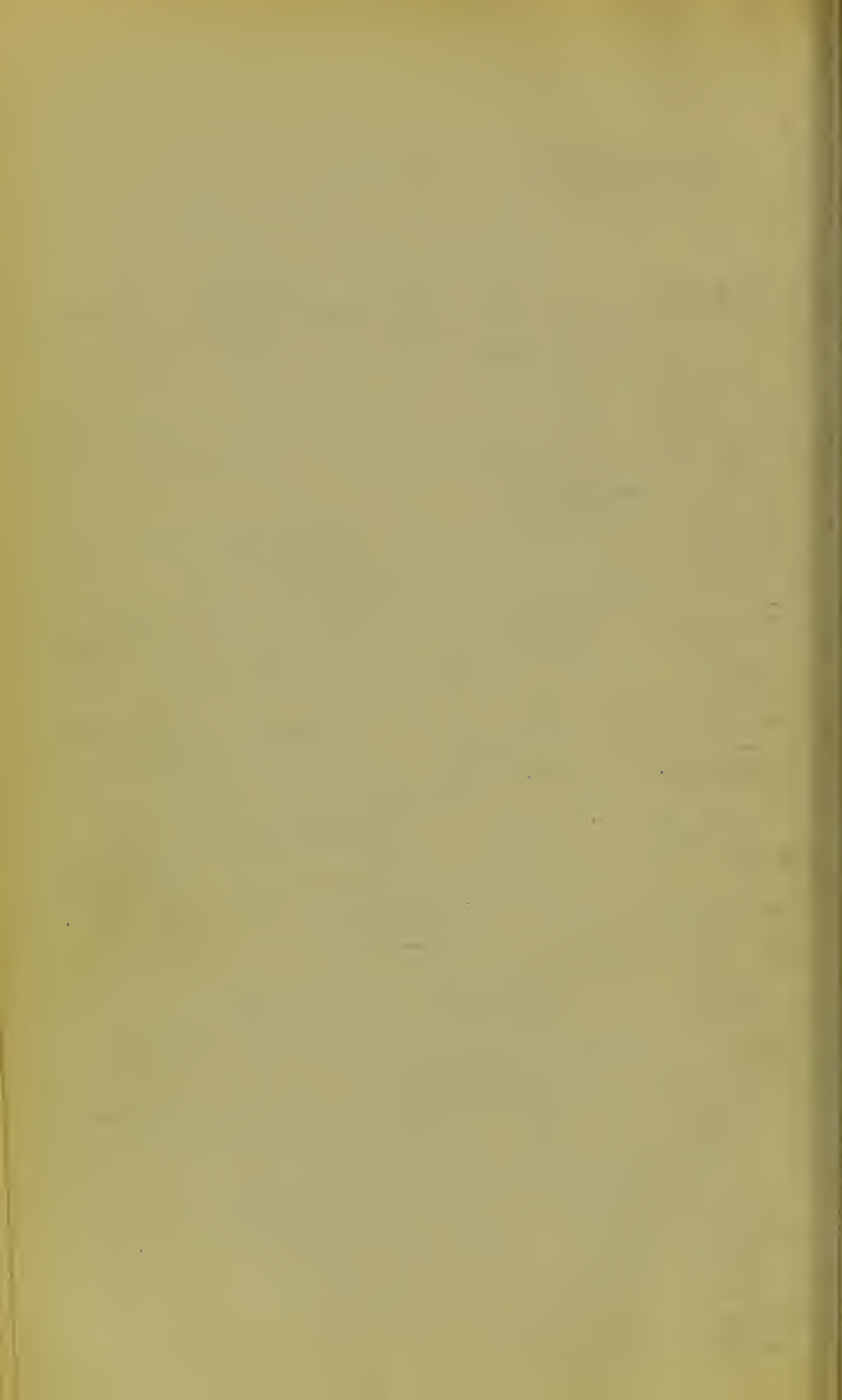
Effect of Deformed pelvis on the Progress of Labour

- In first stage delay due to slow dilatation of cervix.
- Second stage delay due to head not adapting itself to deformed diameters -
- If this delay goes on the uterus will rupture -

The life of Mother & Child are both endangered

1. Pressure & bruising of soft parts
2. Tearing by any spine in pelvis - especially in kyphotic pelvis -

Mother
Inertia
Rupture of Uterus



The artificial interference increases mortality to mother + child.

Diagnosis of Pelvic deformities

14% of women have some pelvic deformity.

History of Patient. Rickets - osteomalacia - hereditary tendency to some deformity -

History of previous labours

General appearance of Patient - Small women often = narrow pelvis. Very large women however may have deformed pelvis.

Broad hips & straight limbs point to a well formed pelvis. Narrow hips & bent limbs give contra indications.

Rickets or kyphosis may be made out by patient's appearance. Pseudoclonous belly in $\dot{\text{I}}$ para may = too narrow pelvis. (ie head not in pelvis). Early rupture of membranes especially in $\dot{\text{I}}$ para = pelvic deformity.

Measurements of Pelvic

Dimensions



Calipers are used - also a long index fingers -

A External -

Interspinous 9 inches

Intercristal (1" greater) 10 inches

Intertrochanteric $11\frac{1}{2}$ inches

Conjugate (Paudelogue)

= external measurements between

spine of last lumbar vert. +

symphysis Pubis = $7\frac{1}{2}$ inches -

B INTERNAL

Internal diagonal

Conjugate = $4\frac{1}{2}$ in

In normal pelvis subtract $\frac{1}{2}$ in

In ricketic pelvis subtract $\frac{3}{4}$ in -

because symphysis pubis is lower than normal -

If Conjugate	Then Use
4 - $3\frac{1}{2}$ in	Forceps
$3\frac{3}{4}$ - 3 in	Turning
$3\frac{1}{4}$ - 2 in	Embryotomia
below 2 in	Caesarean Section
$3\frac{1}{2}$ - $2\frac{1}{2}$ in	Premature Labour

III. Faults in Child— *in lingering 2nd stage*

1. Shortness of Umbilical Cord. *rare cause + (?)*
2. Death of the child.
3. General large size of the child.

Larger size of head in male than female.

4. Strong ossification of head.
5. Enlargement of head or body from disease :
Hydrocephalus, Hydrorachitis, Hydrothorax,
Ascites, Hydronephrosis, Tumours.

General principles of treatment.

6. Malposition of the head.

Occipito-posterior cases.

Causes of delay.

Management.

7. Malpresentation of the head.

(1.) Parietal, (2.) Occipital, (3.) Frontal, ~~4~~

(4.) Face presentations.

Nature and frequency, *1 in 200-500*
Causes, *Flat pelvis etc - Faults in P.P. + P.*
Positions : frequency and nomenclature.

Mechanism :

1. Extension, 2. Internal Rotation,
3. Flexion, 4. External Rotation.

Diagnosis.

Prognosis.

Causes of delay.

Management.

- (5.) Head presentations complicated by malposition of the arm. *1 in 50*

General Rules for treatment of cases of Malposition and Malpresentation of the head.

III Faults in Child

1. Shortness of Umbilical Cord
 - (a) Absolute or essential.
 - (b) Accidental.

The first is very seldom a cause of delay for it would have to be less than 6 in in length.

(b) One case in 5 or 7 have the cord round the neck -

Dangers

- Separation of Placenta
- Strangulation of Foetus
- Rupture of Cord
- Inversion of Uterus

Prognosis This is a rare cause of delay in labour -

To cause delay it must be less than six inches long -

Treat if you cannot remove the cord ligature & ~~tie~~ cut.



2. Death of child

Child may be swollen with
putrefaction - treat by puncturing
the skin & allowing fluid to
escape

• Large size of child

Normal 7 lbs

Anything over 10 lbs is rare
But may be up to 20 lbs -

Due 1. Prolongation of pregnancy

2. Large + ~~age~~ ^{old} ~~of~~ parents.

3. Scaparity -

Male child weighs 7 lbs 9 oz

Female child weighs 6 lbs 12 oz

Male head $\frac{3}{8}$ in greater in
circumference than female
head - (average) -

Mother more often dies in male
than in female births -

In complicated & difficult
labours the child is more
often male -

Child more often dies when
male -

Common

Causes of Rupture of Uterus

1. Hydrocephalus
2. Impacted transverse
3. Narrow brim & large head

4 Strong ossification of Head
Preventing moulding + distortion -

5. Enlargement of Head or body
from Disease -

(a) Hydrocephalus may cause
rupture of Uterus!

may be - 1. Internal (~~general~~ ^{inside cavity of skull})
or 2. External (general edema of scalp)
Cranial bones are thinner than
normal, sutures widely separated,
+ fontanelles both large +
expanded - & here + there there
may be little islands of bone -
Treat You must NOT use Forceps -
also ascites, Hydrocephrosis,
Tumours -

General Principles of Treatment
Let Nature complete the case
if her efforts are sufficient -
If danger and the Head not
yet born open any tumour upon
it or the cranium if hydrocephalic
if ~~the~~ head born + body retained

HEAD MOULDING

II



CAESARIAN SECTION
(HEAD UNAFFECTED BY LABOUR)



BREECH



PERSISTENT OCCIPITO-POSTERIOR



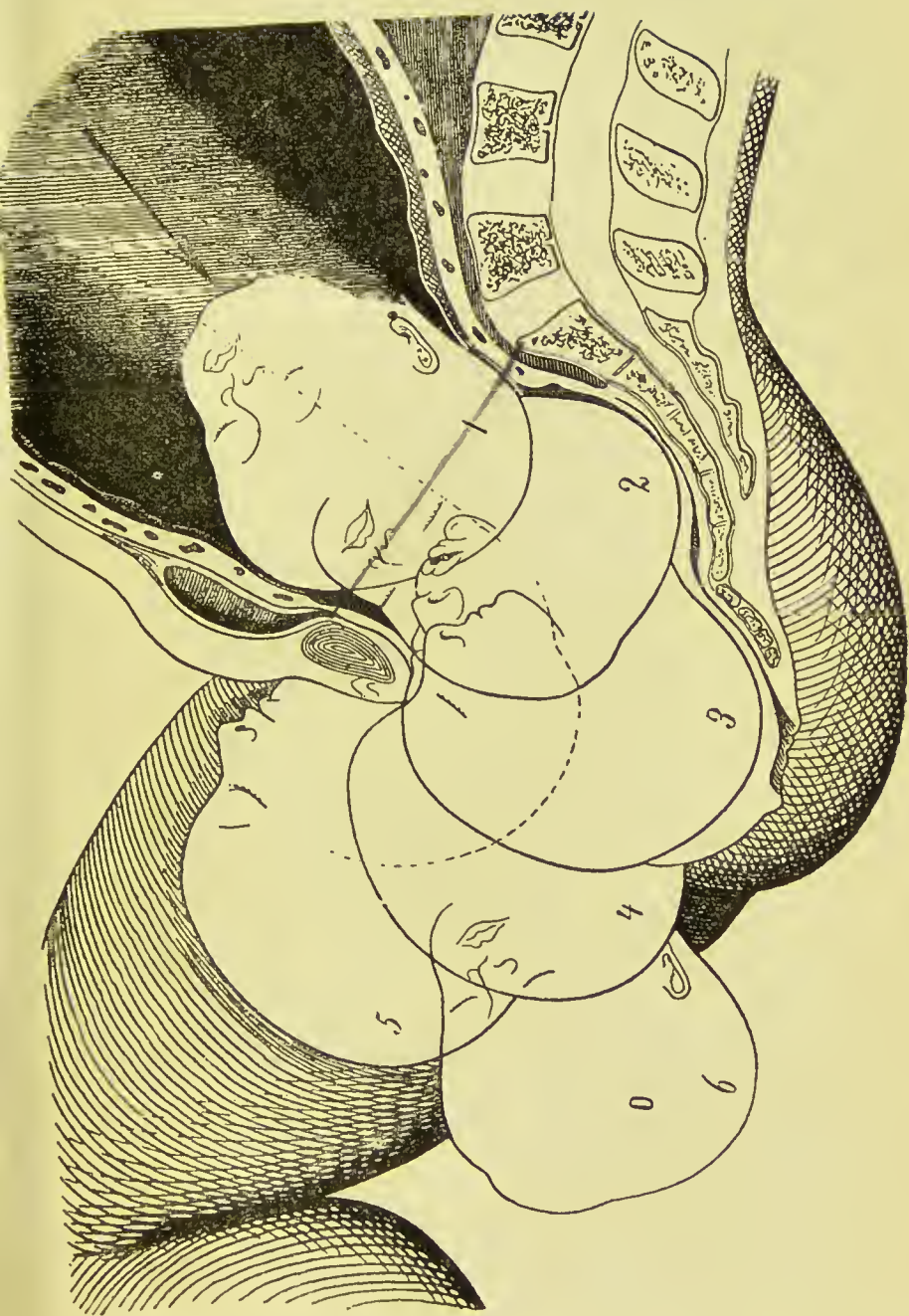
BROW



FACE



FACE
(SHEWING RELATION OF HEAD TO BODY)



HEAD MOULDING II



Brow than face -



BROW



FACE



R.O.P



FACE



assist by traction, or if ness by
perforation of the enlarged part-
4. If an extractive ~~the~~ operation
be required version is to be
prefered to forceps & if a
Footling case be present
puncture spinal cord & dry off
the fluid -

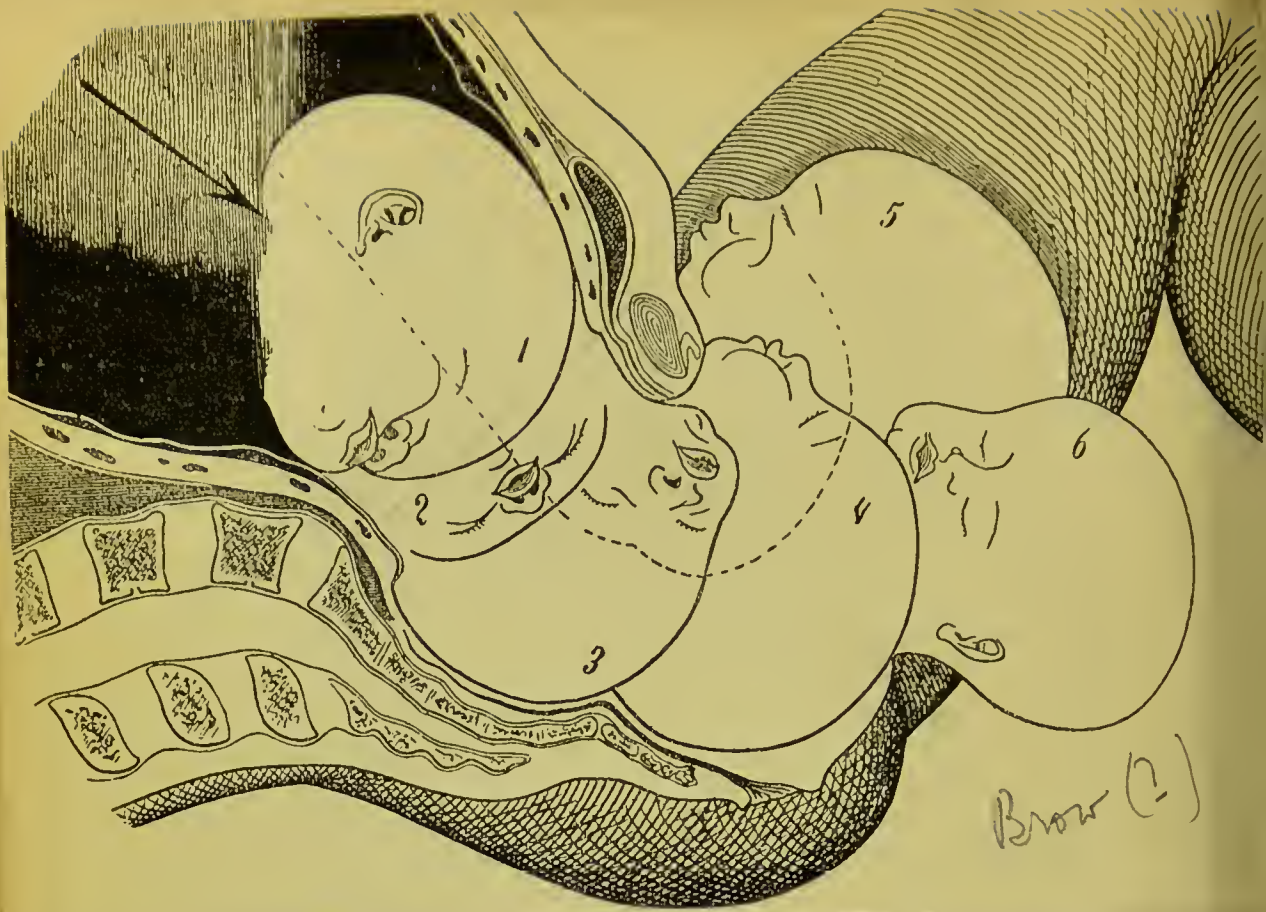
Malposition of the Head

ROP + LOP -

The better the flexion the more
certain & the better the internal
rotation.

R.O.P Head Moulding

Caput on upper & ant part of
left parietal bone. & secondary
caput, after rotation, will be on
upper & post part of left parietal -
The left parietal over rides the
right parietal (as it is ant).



General Rules of Management of cases of MALPRESENTATION of HEAD

1. avoid rupturing the membranes
2. Have the passages as dilated as possible, by relaxants if necessary.
3. Keep the urinary bladder and rectum empty.
4. Avert all causes likely to diminish the powers of the Uterus

Guard carefully the perinaeum if the head emerge in an unusual position or presentation.

As a rule leave the process, in all deviations of the head, to nature - except forehead & face presentations not entering the brim, and in mento-sacral faces cases -

In difficult cases treat them as cranial cases, by turning &c.

INSTRUMENTAL LABOURS.

DEFINITION.

PATHOLOGICAL CAUSES.

CIRCUMSTANCES which determine interference.

GENERAL RULES for non-interference.

PROPOSITIONS regarding duration of Labour.

MODES of OPERATIVE INTERFERENCE :

1. Fingers—various modes of shelling out head.
2. Fillet—nature and use ;
3. Forceps ;
4. Lever.

INDICATIONS FOR USE OF THE FORCEPS.

A. DELAYED LABOURS.

I. Fault in *Powers*.

1. Uterine—Inertia, Irregular action ; Misdirection.
2. Accessory.

II. Fault in *Passages*.

1. Soft Canals—In Cervix ; Vagina ; Perineum.
2. Hard Canals—Pelvic Contraction.
(1.) Degree, (2.) Form.

III. Fault in *Passenger*.

1. Large size of Head.
2. Malposition of Head.
3. Malpresentation of Head.

conjugate $> 3\frac{1}{4}$.

B. DANGEROUS LABOURS.

I. Maternal Complications.

II. Fœtal Complications.

Preliminary Rules regarding the use of Forceps.

General Rules for the introduction of the Forceps.

Rules for working the Forceps.

Dangers attributed to use of Forceps.

MANAGEMENT OF FACES CASES

If seen early, turn to breech -

Supposed to require active interference -

1. Podalic Version in the first stage
2. Cephalic Version or Rectification
3. Lever and Forceps

No interference usually required -
in very difficult cases treat by
Rectification or as a difficult Cranial
presentation.

Forceps

Invented by Peter Chamberlain -
Kept secret for some centuries -

Blade: Handle - & Lock - essential
parts. Each part has many variations
Blades fenestrated or not -

Handles. hooked = French

Handles + hooks = Germany
Locks differ also in different
nationalities.

Pivot or Prong = French

Button + Notch = German

Pivot + Notch = Modern French

Smellie's notch = English

ovic Curve was added to the

THE FORCEPS.

NATURE AND CONSTRUCTION: blade, handle, lock.

HISTORY OF INTRODUCTION.

VARIATION IN FORM: primitive—short, straight (Chamberlain and Palfyn).

1st Modification—long, curved (Smellie and Levret) ;

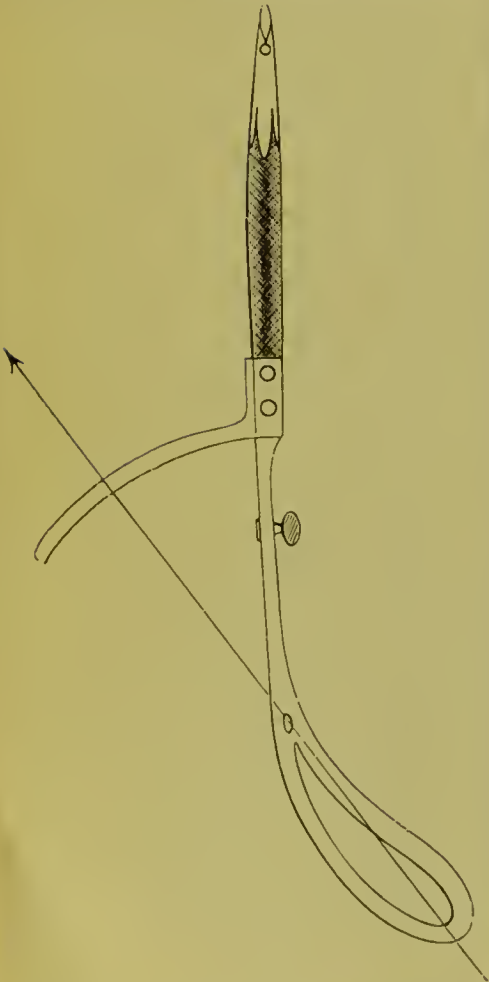
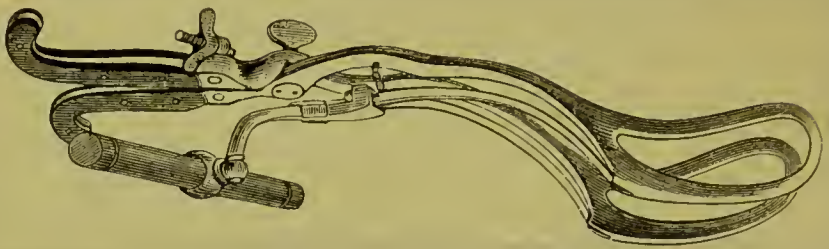
2nd Modification—handles with compensation curve (Hubert and Aveling) ;

3rd Modification—axis-traction with jointed rods (Tarnier).

MINOR VARIATIONS.

NATIONAL TYPES.

MODES OF ACTION.



Hubert's modification

Instrumental Labours

Blades at end of last century -
this was introduced by Levert + Smellie

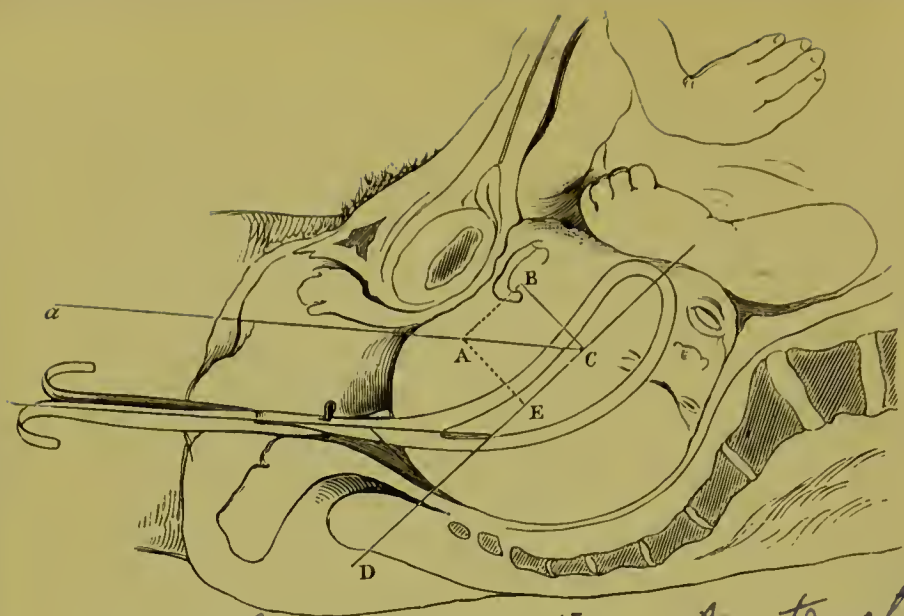
Hubert + Aveling added the
compensation or perineal curve -

Arnier added traction
rods fastened to the blades
having the compensation
~~the~~ curve upon them -

Fixation screw is added close
to the lock so that they may
be fixed before making the traction
~~the~~

The traction is not in the axis
of the head (axis traction forceps)

The "application" handles act
as a guide for the direction
of traction - Keep the traction
rods parallel to the shanks
+ you are all right -

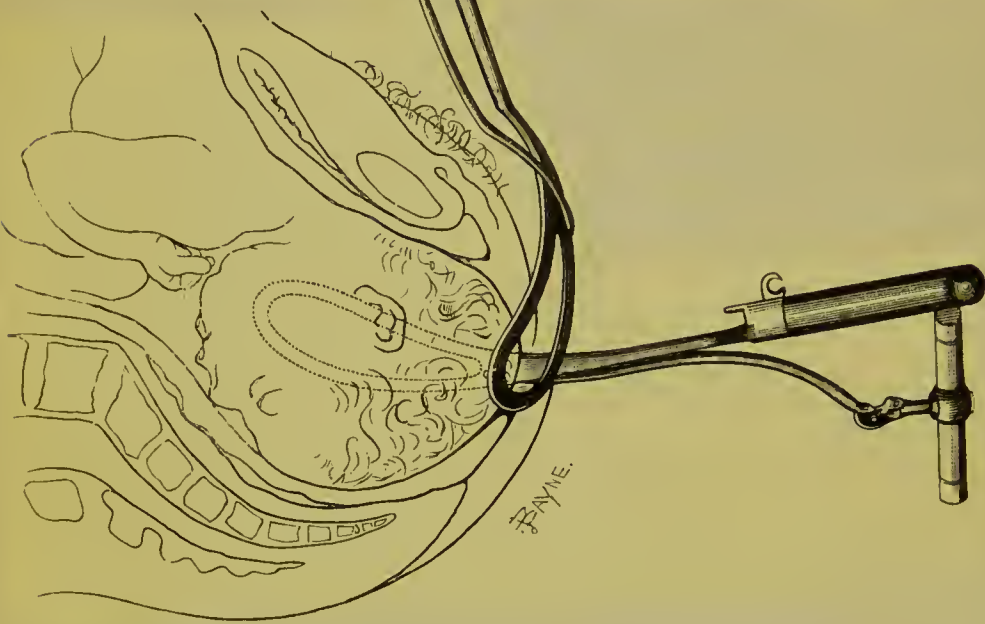
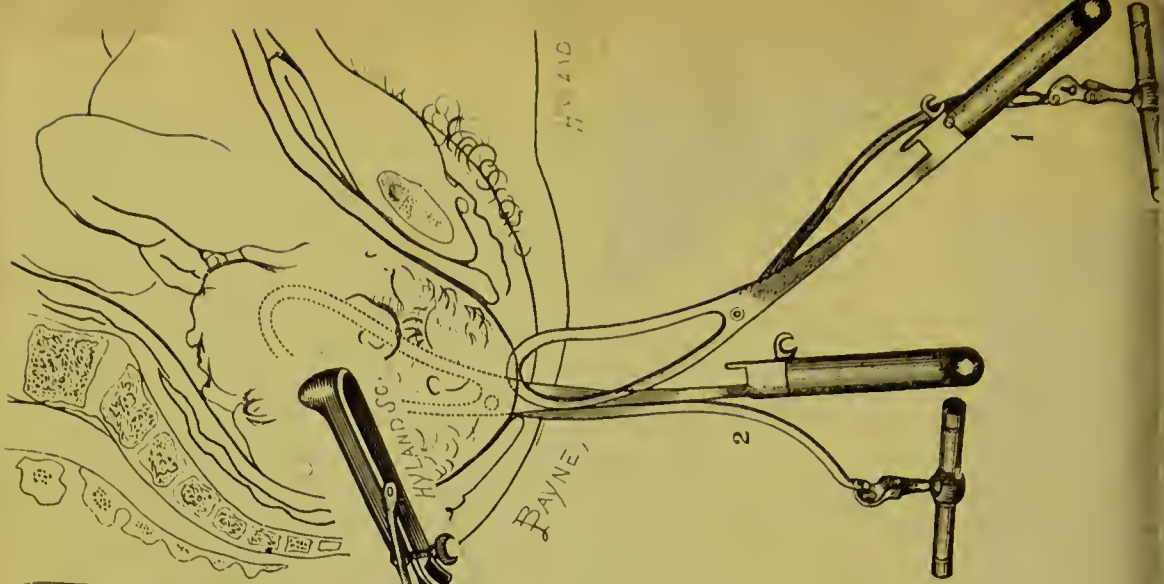


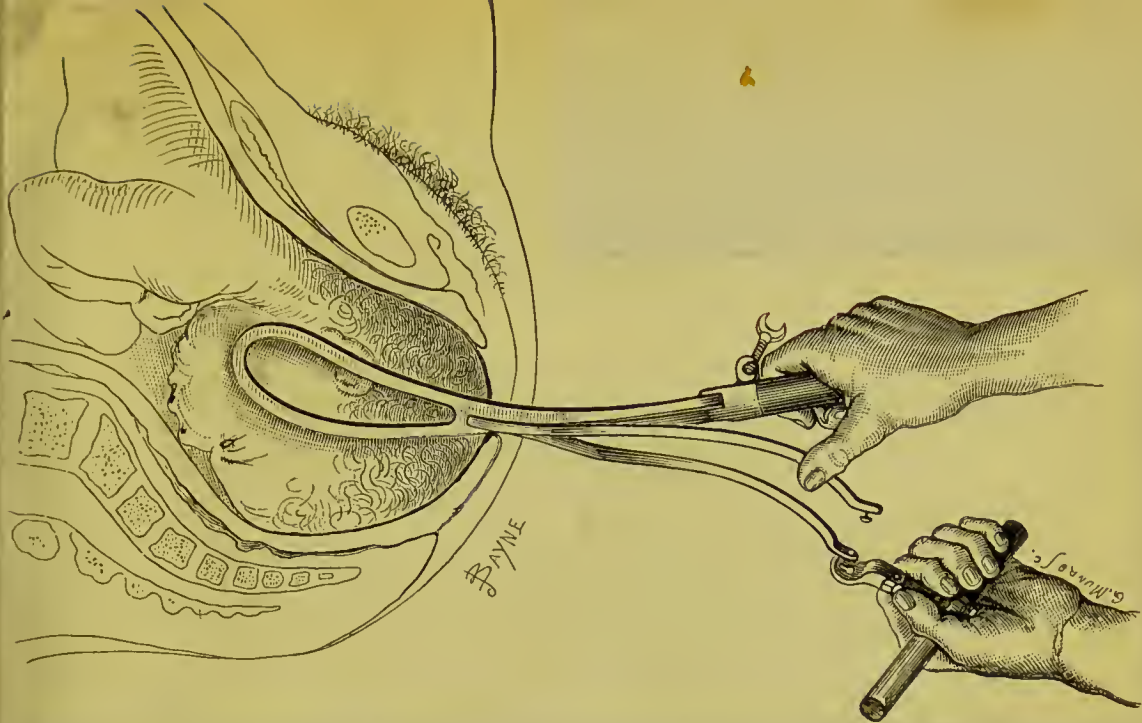
French forceps, line of traction
 wrong - No curve of compensation
 Only Smellie's Pelvic curve -

- using forceps - you may have in view
- i. Extraction
 - ii. Compression of the head
 - iii. Lever action (work only from blade to blade "pendulum action")
 - iv. Rotating action - In axis traction forces the rotation generally take place by itself
 - v. ~~Diam~~ ~~Dyon~~ Dynamical action as foreign bodies & also when head begins to descend may cause the uterus to be stimulated to contract -

Indications of use of forceps

Faults in Powers, Passages or Passengers
in Delayed Labours
Maternal & Foetal Complications
in Dangerous Labours





Introduction of Forceps

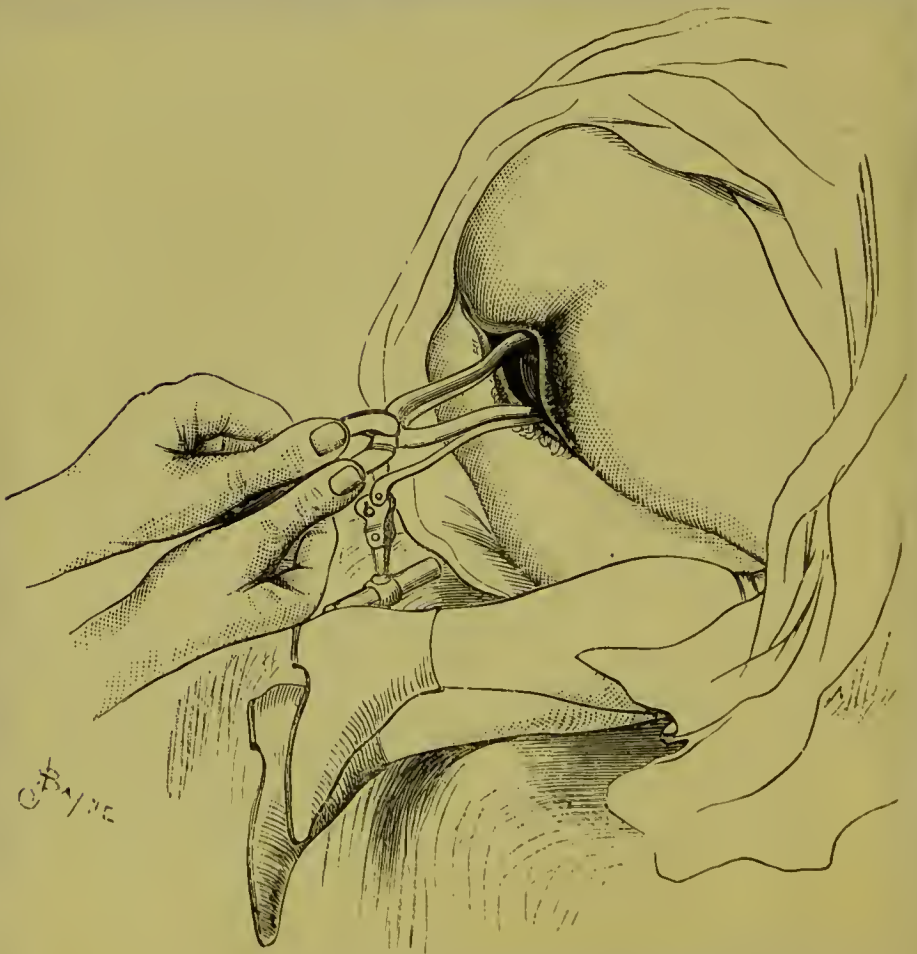
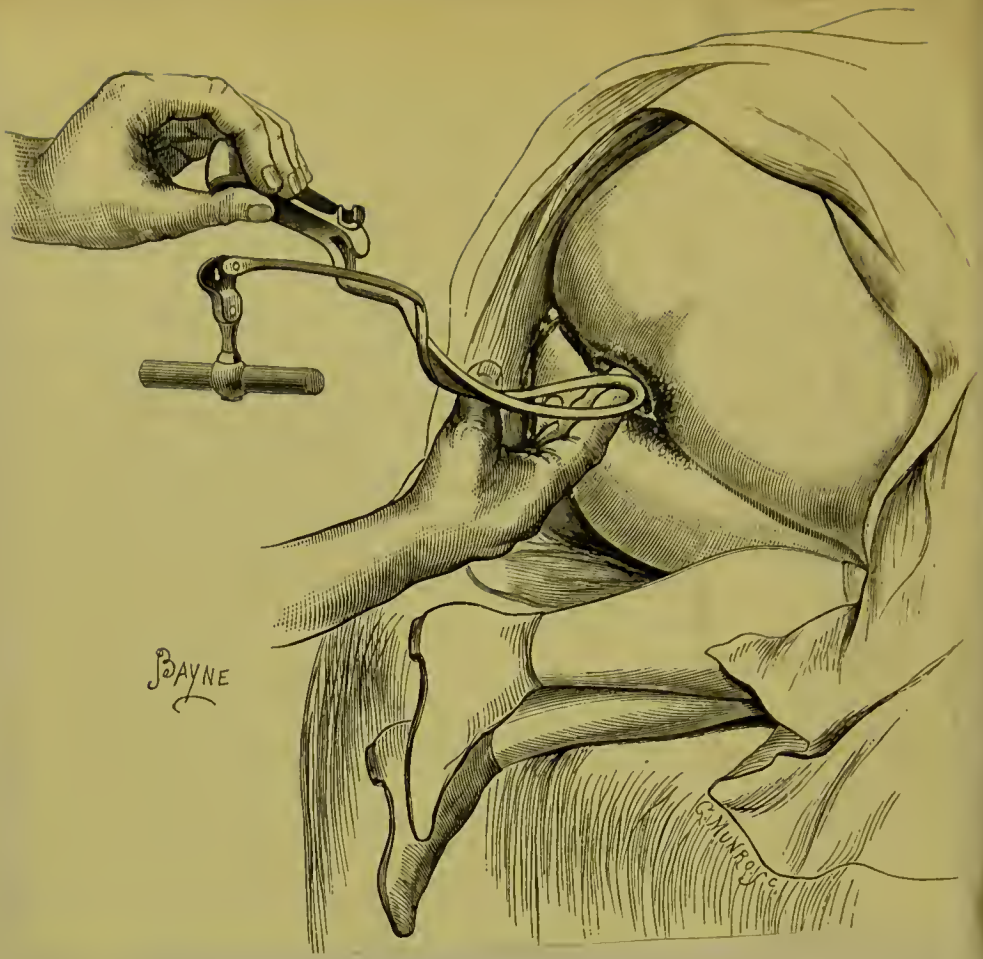
Introduce first the left blade which has traction rod + handle attached to it, + stamped LEFT LOWER FIRST. Hold it in the Left hand + use the fingers of the right hand as a guide - Insinuate, do not force, on the instrument and withdraw it partially when any great resistance offers.

Keep its point always in contact with the Foetal head.

Introduce each blade so that its concavity adapts itself to the convexity of the foetal head.

Enter + apply each in proper axis of Pelvis

Introduce the instrument during



the intervals between the pains & always suspend the attempt during continuance of the Pains.

8. When it is fully introduced keep it in situ with thumb & two last fingers of the left hand & use again the 1st two fingers as a guide.
9. Introduce the right blade with traction rod swung forwards & pointing it at first towards the hollow of the sacrum.
10. Carry it round head until it comes in complete antagonism with the left blade -
11. Swing back the right rod and adapt it to the locking Plate.
12. Adapt but do not tighten the fixation screw -

Also sterilize —

Preliminary Rules Regarding Use of Forceps

- Be perfectly assured of their necessity -
- Always tell the relatives and generally the patient.
- Be cautious in your prognosis as regards the infant.
- Always empty the Rectum + Bladder -
- Place the Patient on her left side, having her body across the bed + her nates at the edge of it.
- Warm and grease the instruments + if ~~not~~ necessary lubricate the maternal passages -
- Anaesthetize the patient.
- Assure yourself of the exact position + relations of the Head, introduce the hand as far as necessary. Make this examination during a pain + continue the examination until a pain + come + passed -

Rules for Working the Forceps

Grasp application handles & fix screw at a point where safe and sufficient compression is secured.

Make traction with traction-handle during a pain, or ~~or~~ if ~~not~~ no pain is present, at intervals.

Keep traction rods parallel with the shank.

after each traction slacken but do ~~not~~ unship the screw & examine the progress of the head.

Where rotation has to be effected and rectification with the application handles.

Support the Perinaeum very carefully with the left hand.

Make the head distend it & pass over it very slowly and allow Uterus itself as often as possible to complete the expulsion of the head and always of the body.

Immediately after birth of head slacken the screw, free the right rod & remove the right & left blades successively.

4. VECTIS OR LEVER.

History. Various forms.

Cases in which used. Rules for use.

INSTRUMENTAL LABOURS—DESTRUCTIVE TO CHILD.

Operation of Embryulcia divided into three stages: 1. Perforation;
2. Head comminution; 3. Extraction.

Indications for Embryulcia.

Signs of death of the Fœtus.

EMBRYULCIA.

Indications:—

1. Contraction of pelvis or soft parts—ranging from 3.25" as a maximum to 1.5" as a minimum.
2. Certain cases of obstruction due to child, such as some face cases, locked twins, double monsters.
3. Certain conditions in which safety of mother demands speedy delivery, such as hæmorrhage, exhaustion, convulsions, &c.

PERFORATION is the first step in all the operations.

Preparation.

Position.

Exploration—determine three points—

1. Sacral promontory.
2. Foetal head.
3. Os uteri.

Point selected.

Method of operating.

If perforation insufficient, then further comminution is to be effected by:—

- A. Craniotomy.
- B. Cranioclasm.
- C. Cephalotripsy.
- D. Cephalotomy.
- E. Basilysis.

Lever or Vectis

Exactly like one blade of the Forceps.
Not used now. Might be found
~~not so~~ serviceable in flat pelvis
but of course forceps ever so much
better -

Instrumental Destructive to Child

Embryulcia

or hooking out the infant. Divided
into three stages:—

1. Perforation
2. Head comminution
3. Extraction

Perform ~~the~~ embryulcia in Malacosteam.
However Caesarean section is so
much improving & forceps are
so much better that embryulcia
less & less practiced every-
the size of each succeeding child is
larger -

Embryulcia may have to be performed
with tumours present, atresia
of vagina, hypertrophic elongation

1. PERFORATION.

Instruments required : Perforators, Trephine, Basilyst.

Rules for operation.



A. P. Simpson's Basilyst



Simpson's
Perforator



Perforator
Scissors

5 inches

Trephine



Trephine



Perforator

of cervix uterine, locked twins,
& in cases where the child is already dead.

Instruments required:-

Perforators

Trephine

Basilyst



see preliminary rules for forceps -
clear bowels & bladder -

But Apply binder or get some one
to press & so keep head of child
fixed in brim of pelvis.

Feel very carefully the relations of the
head of the child -

Rules for Performing Perforation

Introduce perforator with right hand
using the left hand as a guide & guard -
Perforate a parietal bone & not a
suture

Take care to place the perforator
directly against the part - at
right angles not obliquely -

Effect the perforation by a
semi-rotatory or boring motion
after the perforator has sunk

Perforation may be sufficient but you may have to go on to :-

2. HEAD-COMMINUTION.

Methods: Craniotomy, Cephalotomy, Cephalotripsy, Cranioclasm, Basilysis.

(1.) Craniotomy.

Instruments: Lyon's forceps, Osteotomist, etc.

Rules for operation.

(2.) Cephalotomy.

Instruments: Saw-forceps, Labitom, Ecraseur.

(3.) Cephalotripsy.

Various forms of Cephalotribe.

Rules for use.

(4.) Cranioclasm.

The Cranioclast.

Rules for use.

(5.) Basilysis.

Instruments: Trans

3. EXTRACTION.

How soon performed

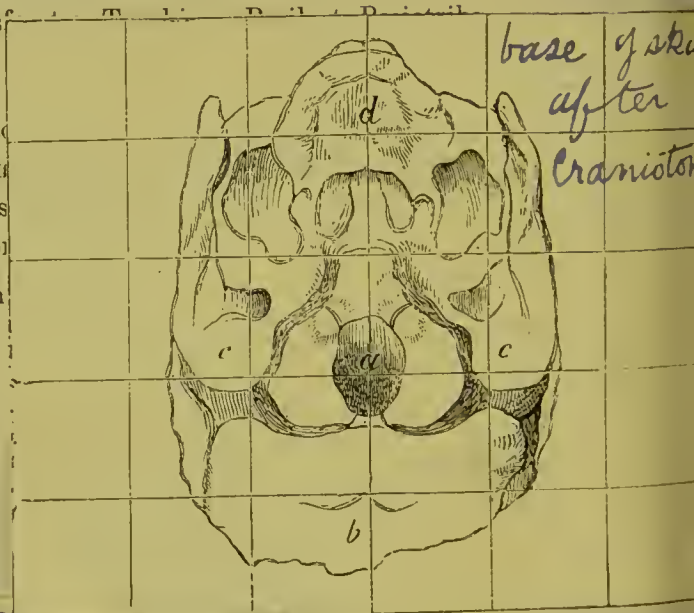
Instruments: Hook

Basilyst-tractor, Bas

Rules for Extraction

Subsequent duties after Em

Risks of the operation.



LYONS CRANIOTOMY
FORCEPS



FORCEPS



- to the stop, open it widely & crucially.
6. Advance the instrument into the encephalon & break up the very base of the brain -
7. Remove with extreme care the detached portions of bone - also wash out the cranial cavity with sterilized lotion -

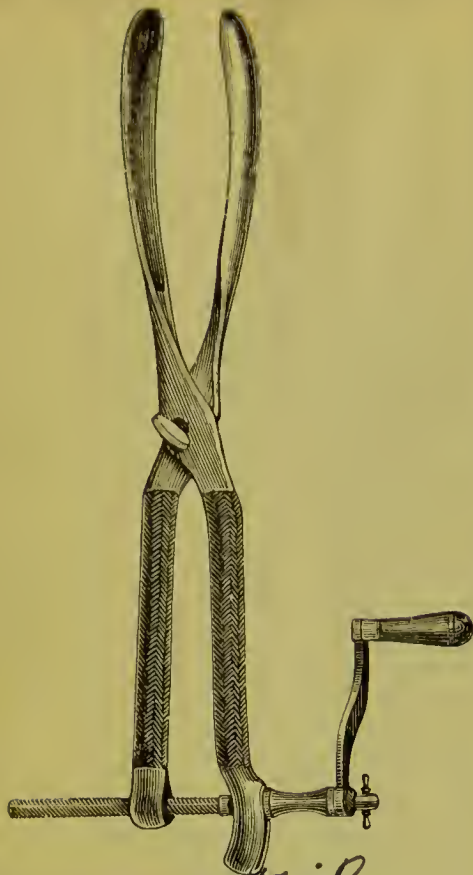
Head Comminution

Craniotomy

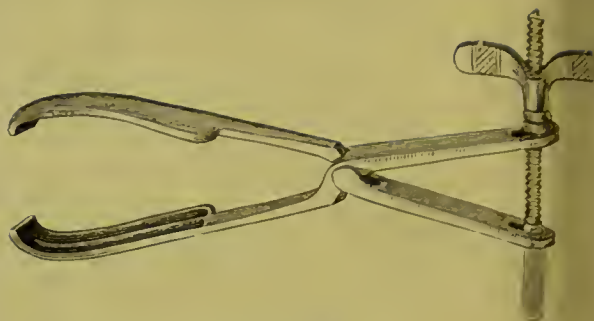
Rules for operation :-

Pass instruments with one blade inside skull & break off fragments. Where the disproportion between the head and the pelvis becomes greater breakdown and remove more and more of the cranial arch. In breaking down separating and removing the cranial bones do not tear the scalp but preserve it as a protection to the soft parts against the edges of the bones -

Cephalotomy



Cephalotribe



Cephalotribe
"Braxton Hicks"



"Mishdach" "Contusor"

arabian from
albucasis

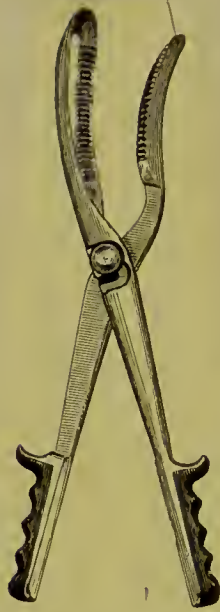
II Cephalotripsy

Rules for use

1. Pass apply and lock the blades according to the rules for the introduction of the forceps -
2. Let the blades grasp the head well ~~forwards~~ towards ~~sup~~ symphysis pubis -
3. Work the screw so as to approximate the blades and break up the head and face, continuing the screwing action until the handles of the instrument are brought into action contact
4. Take off the instrument if there be great disproportion between the head and the pelvis and reapply it, so as to seize the head in a different direction and again crush it -

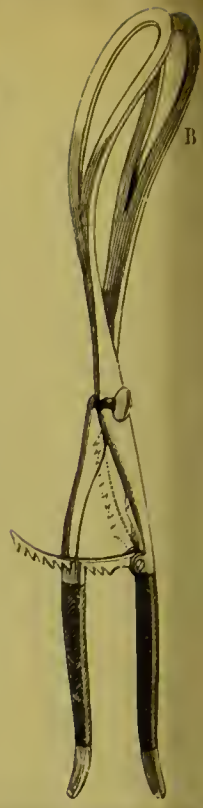
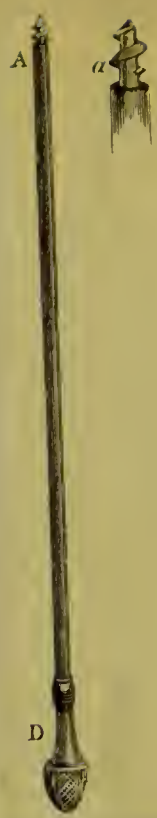


Braun's
Cranioclast

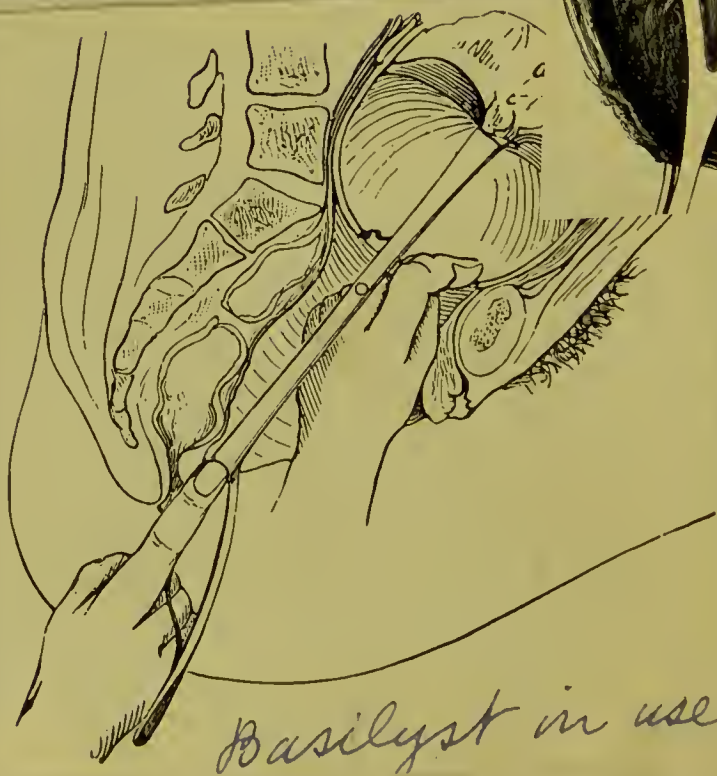


Simpson's
Cranioclast

passed inside



Head
with
Crani-
clas-
in
positi



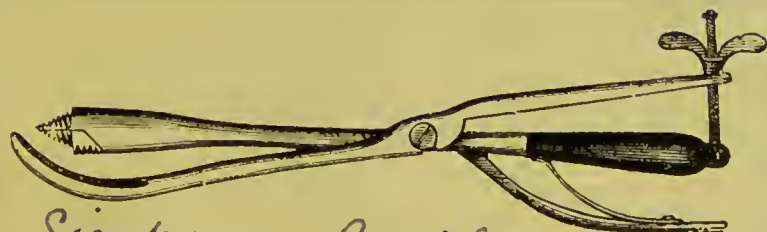
Basilyst in use

V Cranioclasm

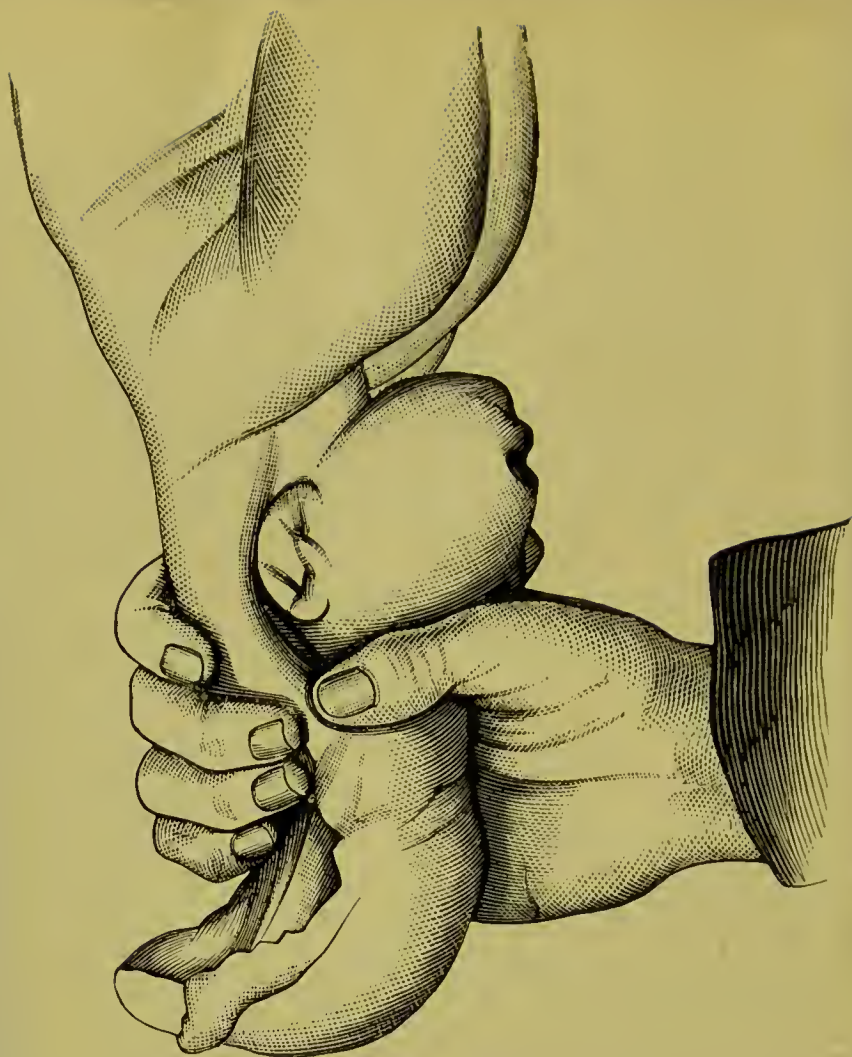
Rules for use

1. Introduce the solid blade into the skull and pass the fenestrated blade over the occiput so as to grasp the Foramen Magnum.
2. By a twisting movement fracture the occiput and loosen its attachments
3. If necessary apply the blades to the right and left sides of the head and fracture the Parietal bones
4. In brow presentations apply over frontal bones

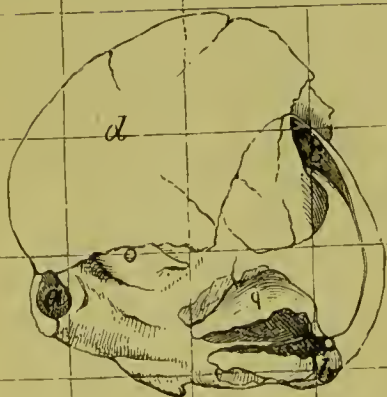
VI Basilysis



R - Simpson's Basilyst.
basilyst tractor applied



Head after Basilysis



Skull

+

head after Cranioclasia

Extraction

Rules

A. General

See that the scalp protects the edges of the bones as much as possible

1. Watch the progress of the fractured bones through the pelvis with the left hand.

2. Work only during a pain ~~or~~ or at intervals if there are no pains

3. Accommodate the head to the form + axis of the pelvis

4. After the birth of the head may require to eviscerate the throat and abdomen.

B Special

I after craniotomy

1. Fix the crotchet inside the skull wherever you have a proper hold

2. (a) In simpler cases on the parietal or temporal bone
(b) In more difficult cases in the foramen magnum



or {behind} orbit.

1. Test the firmness of the hold before using great extraction power

2. after the head is born apply a towel ~~round~~ round it and the neck to pull by:-

II In Cephalotripsy

1. make careful traction after each complete compression of the head -

2. after the head is born retain hold so as to make traction for delivering the body

3. When evisceration is required apply the instrument to the trunk to crush and extract it.

Subsequent Steps

CÆSAREAN SECTION.

History.

Indications.

Period of operating.

The Operation.

CÆSAREAN HYSTERECTOMY : Porro's Operation.

LAPARO-ELYTROTOMY : Gaillard Thomas' Operation.

Cæsarean Section after death of mother.

SYMPHYSIOTOMY : Sigault's Operation.

Caesarean Section

Indications

Contractions of the Pelvis below 2" in conjugate of brim -
Between 2" + 3" you have a relative consideration -
In Malacosteon + Ricketty pelvis & where there are pelvic tumours you may have to perform the operation even if the conjugate is above 3".

In carcinoma of cervix uteræ, & some where there is contraction in vagina.

The best period (when possible) to perform the section is after the cervix is has somewhat dilated but before the membranes have ruptured - Some have suggested that labour should be artificially started, before performing the operation, by introducing bougies etc etc -

∴ operate towards the close of the first stage -

CÆSAREAN SECTION.

Classical Operation.

1. Opening Abdomen.
2. Incising uterus *in situ*, and extracting fetus.
3. Removal of placenta, and arrest of hæmorrhage.
4. Suture of abdominal wound.

Porro's Modification.

1. Abdominal incision.
2. Cutting into uterus while in abdomen, and removal of fetus.
3. Amputation of uterus and appendages, and formation of a pedicle.
4. Dressing of peritoneal cavity.

The Improved Modern Operation. (SANGER.)

1. Antiseptic treatment.
2. *Early* operation.
3. Uterus turned out before being incised.
4. Sutures at upper end of abdominal wound to be tightened, and so close in the abdominal wall under the uterus.
Disinfected gutta percha tissue placed under the uterus to prevent entrance of blood and liquor amnii into peritoneal cavity when uterine contents are septic.
5. Rubber tube to compress cervix and so prevent hæmorrhage.
6. Shock avoided by enveloping uterus in warm cloths.
7. Method of uterine suture to bring peritoneal surfaces in contact. Numerous sutures should be passed, not through entire thickness of wall, but entered between decidua and muscular coat.

Exact sero-serous suture for peritoneal coat.—“LEMMERT.”

Minor Modifications.

MÜLLER.—Uterus brought externally, and elastic ligature applied, before being opened.

FALASCHI AND OTHERS.—Double ligatured the uterine end of the Fallopian tube to prevent future conception.

TART.—Extent of abdominal incision to admit hand only, uterus not drawn out.

Tubing round cervix.

Small hole in uterus so as to admit two fingers, there—after separating them, and so *tearing* uterus.

Fœtus extracted feet first.

American Operation—Gastro-Elytrotomy. (THOMAS.)

1. Incision on right side parallel to Poupart's ligament, and one inch above.
2. Incision down to peritoneum, not through it.
3. Peritoneum pushed from off the fascia.
4. Lateral vaginal wall reached.
5. Ureter removed out of danger.
6. Vaginal wall pushed towards wound by means of sound in vagina.
7. Vaginal wall nicked through, then torn as far as necessary.
8. Cervix directed towards wound.
9. Child extracted by forceps through cervix and through wound.

J. H. C.

you want a bistury, catch forceps,
a probe pointed bistury & sutures -
empty bladder, & bowels, & put
under chloroform. Then examine
again to make quite sure of the
condition of the canals & the
relations of the parts -
The incision should be
made in the middle line
& at least 5 inches in length.
The Abdominal walls are generally
stretched & thin - \therefore be careful.
Make incision in wall of uterus
as near as possible in
middle line remembering the
normal lateral twist of the
uterus to the left. Make small
hole & then pass finger into
it with probe pointed bistury -
Make the incision about 5" long
& lift the head out first -
Divide the cord & give the
infant to the nurse - Next take
membranes & placenta from
uterine wall - Pass sponge
on handle down cervix into



vagina to make sure of its patency - Suture with double row of silk sutures, one row in m m one in muscular wall - Then put another row bringing together with nice precision the margins of the serous covering of the uterus - Then sew up rest -

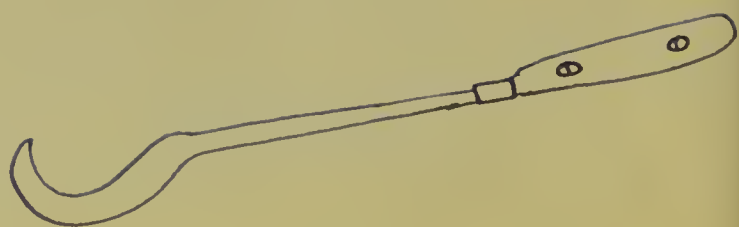
Dangers -

Haemorrhage when uterine wall is cut through also during separation + extraction of placenta and membranes - also some post operative haemorrhage where the wound has not been properly sewn

Shock of operation

Septic + death from general peritonitis.

After death of mother the operation can be ~~ex~~ successfully performed from ten minutes to quarter of an hour. In dying pregnant women have recourse to Caesarean Section.



Laparo-Elytrotony

Getting at uterus through the vaginal roof - Line of incision runs from spine of pubis in direction of ponsart's ligaments to ~~illic~~^{iliac} spine - thus you get into the extraperitoneal fat of the broad ligament (??)

Symphysiotomy

Naturally seen in Hedgehog. Discovered by Sigault when a medical student -

Symphysis can be divided 6-7 cm without injuring the sacro-ileac joints.

Especially used in Paris by Pinard -

Useful in Naegeli's pelvis.

Hooked Knife is used - Inc. made above sym. pubis & knife pulled upwards - then knees are separated to sufficient width ~~to~~ to give say 6-7 cm between divided os pubes -

INDUCTION OF PREMATURE LABOUR.

Nature and history of the Operation.

Sources of danger to the child.

Indications.

Modes of operating.

General Rules and Cautions.

X avoid Placental site

230-250 days
is best time where
a live child is wanted

Bougie passed between
uterus & membranes
best means of starting
uterine action. It
should be left in situ.

restriction of restricting the diet in order to obtain foetus with softened bones such as
1/2 cup of coffee + 1/3 bread ~~to~~ dried in an oven etc.

Induction of Premature Labour

General rules & Cautions

Assure yourself of its necessity by:-

- (a) Pelvimeter - Fingers
- (b) Result of previous labours
- (c) Consultation with some other practitioner

Be careful in calculating the proper period of pregnancy -

Prepare the patient with purgatives, douches, medicated pessaries etc.

Watch her diligently from the commencement of the operation till it is all over

Start labour by means of intra-uterine bougie or (when indication not urgent) by the repeated introduction of fingers through the os internum -

Promote labour by supporting

INDUCTION OF PREMATURE LABOUR



Nature.

Object.

Sources of danger to child :—

1. Preternatural presentations.
2. Miscalculation of term.
3. Rupture of membranes.

Indications for operation :—

1. Extreme contraction of bony or soft pelvis.
 - a.* $2\frac{1}{2}$ to $3\frac{1}{4}$ inch conjugate.
 - b.* Fibrous tumours.
 - c.* Ovarian tumours.
 - d.* Irreducible displacements.
2. Maternal complications.
 - a.* Obstinate vomiting.
 - b.* Albuminuria.
 - c.* Cardiac disease.
3. Foetal affections.
 - a.* Hydrocephalus.
 - b.* Placental disease.
 - c.* Foetus habitually too large.

Proper period.

Various methods.

Two stages—

1. Provocative and preparatory.

Introduction of bougie.

2. Accelerative.

Dilatation of cervix by Barnes' bags.

Proceed thereafter according to circumstances.

s & using dilatation if required.
In special cases use forceps
or turning.

Have a bath and means of
resuscitation of the child at hand.
Previously secure the services of
a wet nurse - and provide an
incubator -

General Rules of Management
~~In none attempt to ameliorate the
presentation -
Preserve the membranes as long as
possible -
Promote, if necessary, dilatation by
douches, enemas etc
allow uterine efforts to expel~~

~~turning~~

III

PRÆTERNATURAL LABOURS.

DEFINITION.

Subdivided into—

1. PRESENTATION OF BREECH or Lower Extremity.
2. PRESENTATION OF TRUNK or Upper Extremity.

PATHOLOGICAL CAUSES : (*a*) in mother ; (*b*) in child.

DIAGNOSIS : during pregnancy and labour.

Præternatural Labours

1. Breech or Lower extremity.
2. Trunk or Upper extremity.

Causes (a) In Mother -

Fibroids, contracted pelvis etc.

(b) In Child -

dead, deformed, twins etc.

~~Here is a~~ A woman may have all her labours breech or other præternatural labour.

Pelvic Presentation

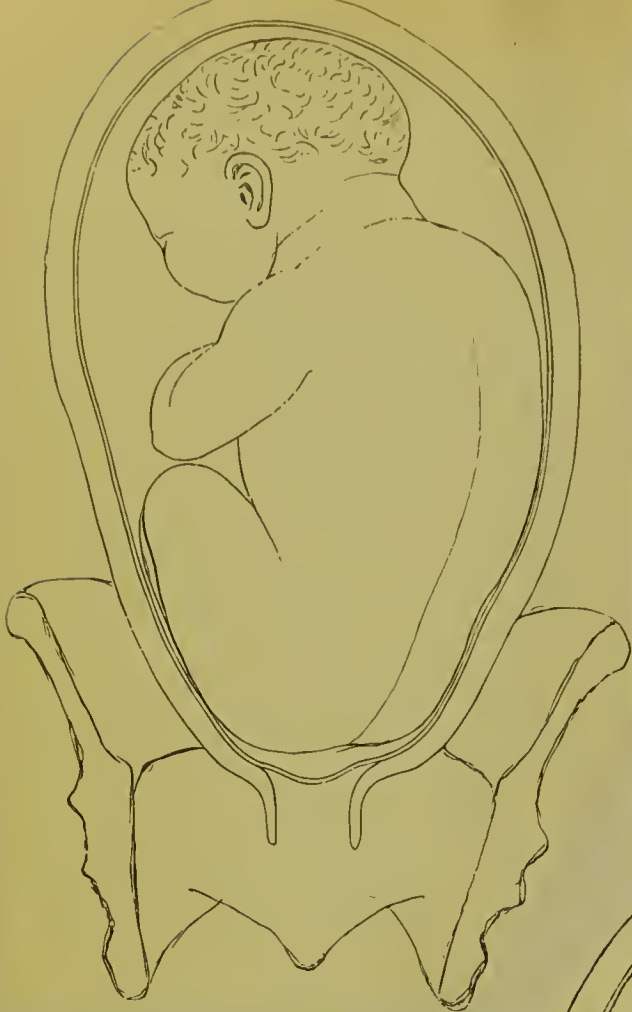
- 3 varieties
1. Breech
 2. Footling
 3. Knee (v. rare indeed)

Diagnosis

By abdominal palpation -
By auscultation. Heart sound heard at higher level.

By P.V. examination -

Liq amni often escapes very early
in fact this is a sure sign that



Breech LSA



Footling RSP
c Prolapsus Funis

either 1. child is dead
11. ~~the~~ Bad presentation
after P.V finger often stained
with meconium -

If membranes still unbroken
they can be ~~be~~ felt like the
finger of a glove -

The presenting part difficult to
touch - + smaller + softer than
the head -

If you touch the feet you can
feel sudden spontaneous movements
If membranes broken feel sacrum,
etc etc of foetus -

Anal aperture is on a protruding
eminence - The genital organs may
also be recognised -

Prognosis favourable as compared with
other pelvic presentations but: -

1. More protracted than head pres:
2. More often have to rescue the child
3. Child is often dead -

Prognosis for infant

Dangers -

1. Early escape of amniotic fluid
+ tetanic contractions of the

PELVIC PRESENTATIONS.

FREQUENCY.

VARIETIES : BREECH, FOOTLING, KNEE.

DIAGNOSIS.

PROGNOSIS for mother and infant.

NOMENCLATURE OF POSITIONS :

- 1 Sacro-Laeva-Anterior. *Commonest*
- 4 Sacro-Laeva-Posterior.
- 2 Sacro-Dextra-Posterior. *then*
- 3 Sacro-Dextra-Anterior. *next*

MECHANISM : Flexion,

Trunk Rotation,

Extension,

Head Rotation.

MANAGEMENT.

DANGERS OF INTERFERENCE.

INDICATIONS FOR INTERFERENCE.

GENERAL RULES OF TREATMENT.

Terms.

1. Prolapsus funis commoner -
2. Liability to still birth.
 1. Foetal circulation interfered with when trunk + cord are passing through the Passages -
 2. or when head is being born -
 3. If head lingers in pelvis the placenta will begin to be pressed on. + Placental circulation stopped -
 4. Child may make respiratory efforts + so smother itself!
3. Damage to soft parts or skeleton - in extracting -

The sacrum is the denominator -

Commonest	L S A	(cf L O A)
then	R S P	(cf R O P)
then	R S A	
then	L S P	

Mechanism

1. Flexion - Packing together of the infant + breech becoming lower than the feet (cf occiput + sacrum)
[or in footling feet becoming lower than breech]



Extension

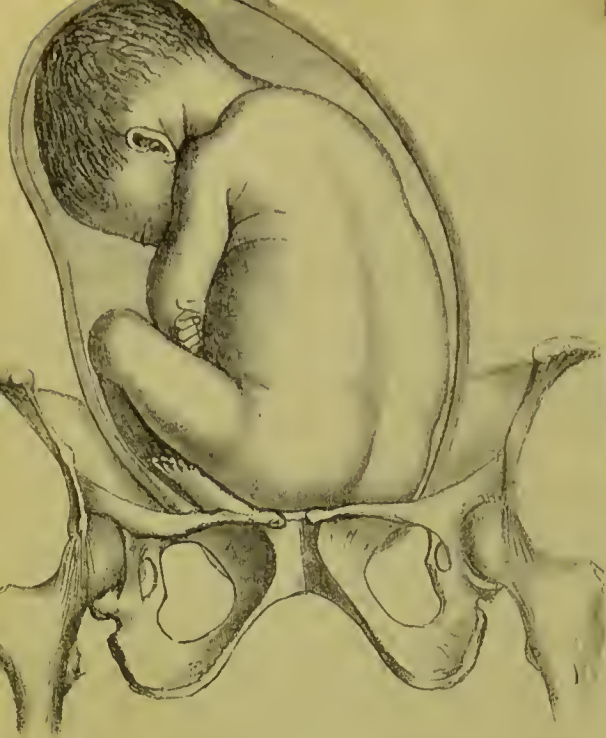
Trunk Rotation = internal rotation
of child on its long axis + thus
the hips lies in oblique (right or
left) at inlet of pelvis, but
in conjugate of outlet -
sacrum moves backwards in
anterior positions.

In LSA rotation brings the
left hip forward under the pubic
arch while the sacrum is carried
backwards towards left
tuberosity of ischium -
forward in posterior positions

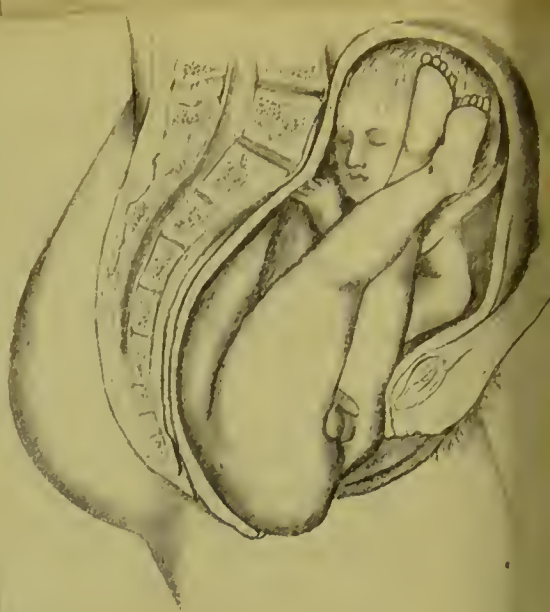
Extension

Head Rotation

occiput turning forward +
face turning into hollow of
sacrum -



BREECH PRESENTING, LEFT SACRO-ANTERIOR L.S.A.



BIRTH OF BREECH



BIRTH OF SHOULDERS



BIRTH OF HEAD

General Rules of Management

. In none attempt to ameliorate the presentation -

Preserve the membranes as long as possible -

. Promote, if necessary, dilatation by douches, unguents etc -

. Allow uterine efforts to expel lower extremities & nates -

When the child protrudes as far as the umbilicus pull down a small loop of the cord -

Different Modes of Further Treatment

If the cord is pulsating well, be ware of interfering till the child is expelled as far as the armpits - May free the hands

If pulsation of cord feeble or spasms of child occur hasten delivery by traction. Always have uterine tumour compressed through the abdominal parietes -

Envelope the protruding part in a warm cloth, more particularly before using any extractive force

If the arms have slipped up by the sides of the head, bring them down, disengaging first the one which is



Displacement of drum
second stage -

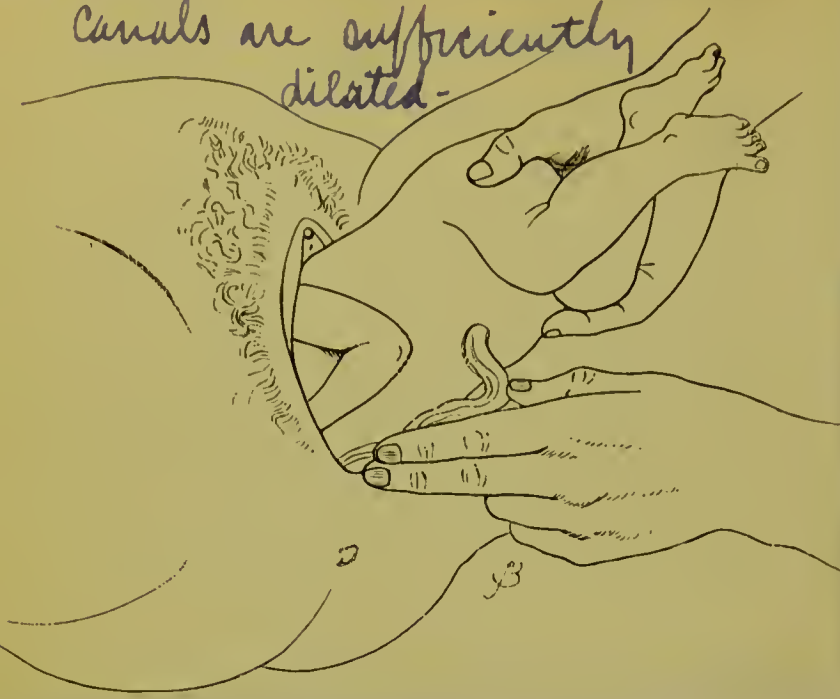
st difficult - (try the ant. one first)
1. In relieving arms pass up one finger
as far as ~~possible~~ bend of elbow
Be sure to bring the elbow over
the face and anterior part of child -
Rectify the position + presentation
of the head so as to allow it to
pass the brim.

In passing head through the ~~an~~
outlet always bring the chin
+ nose by one side of the **coccyx**
+ keep the head with chin
depressed on breast.

risks in pulling down arm -

Fracture of Humerus. || ~~Dislocation~~ Dislocation
these risks prevented by attending to N° 10.

No traction in this stage unless
Canals are sufficiently
dilated.



is employed
1. Don't haste
II. Make traction
in curves of
the Pelvis
III. Head must
be flexed &
kept flexed

Intelligent
assistant pressing
+ squeezing



Traction minor
to the pressure above

Finger to Mother

Laceration of Maternal Canals -

May leave uterus paralysed & inert.
(This is caused by sudden evacuation)
avoid by taking care to always make
pressure on fundus above (assistant)
while you make traction below -
Finger to Child

Sudden expansion of child leading to

1. Displacement of arms -

2. Head flexion not ~~keep~~ kept up.

avoid by keeping up steady pressure
& through the proper axis. & also
make pressure from above -

All you have to do in most
cases is to watch till after
the lower limbs are born -
then pull down a loop of the
cord & feeling it get an
idea of ~~its~~ the child's condition.
If strong & good pulsation
there is nothing to do but
support the trunk & you
need not do anything even
when head is born - But this
the ~~also~~ dangerous time -



ractioner may have more difficult
cases where he must find one
foot or one limb & pull it
down. The legs may be straight
up over the thorax -

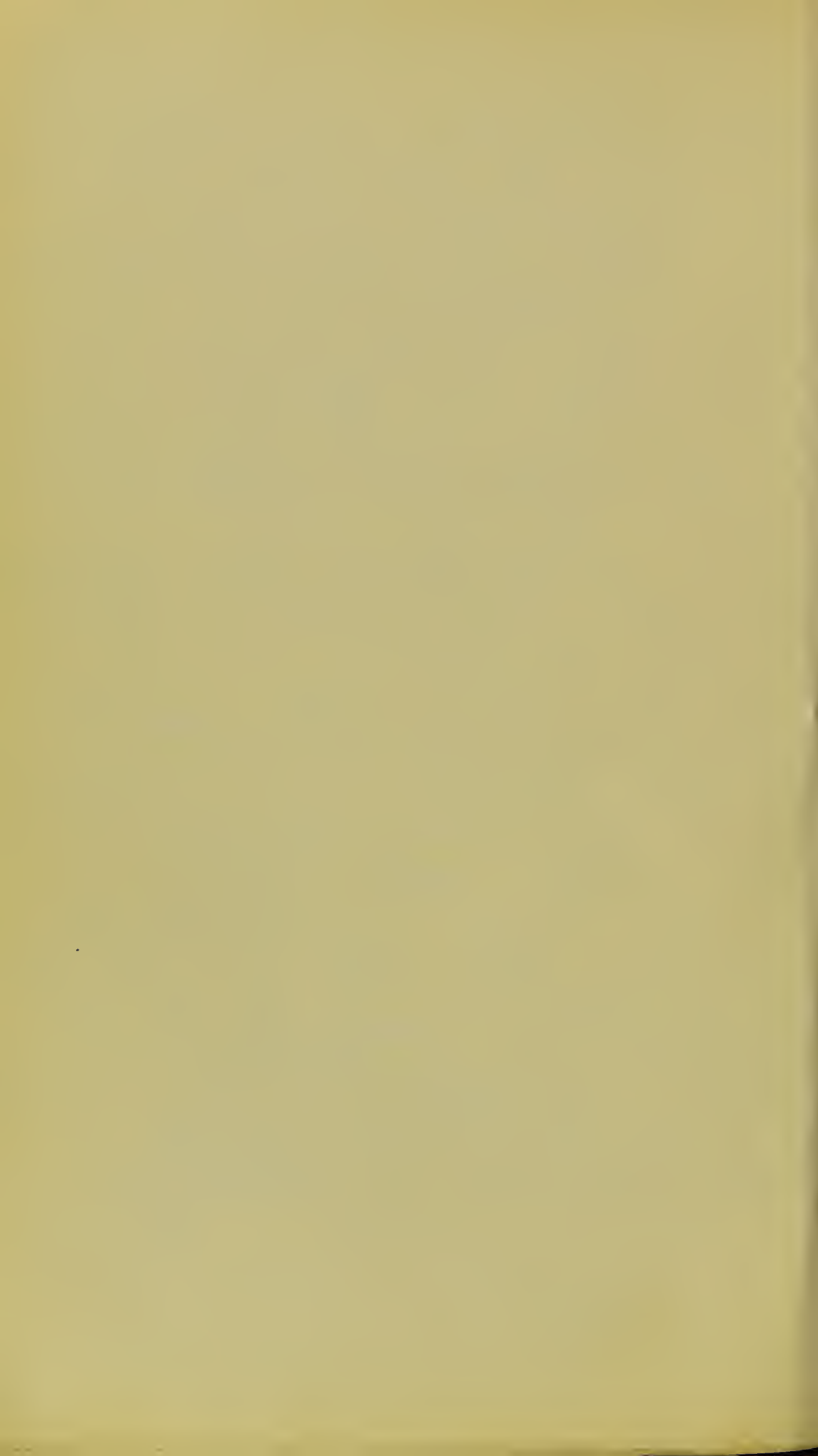
If this does not succeed - the
axis traction forceps may have
to be ~~use~~ employed - applied
to pelvis -

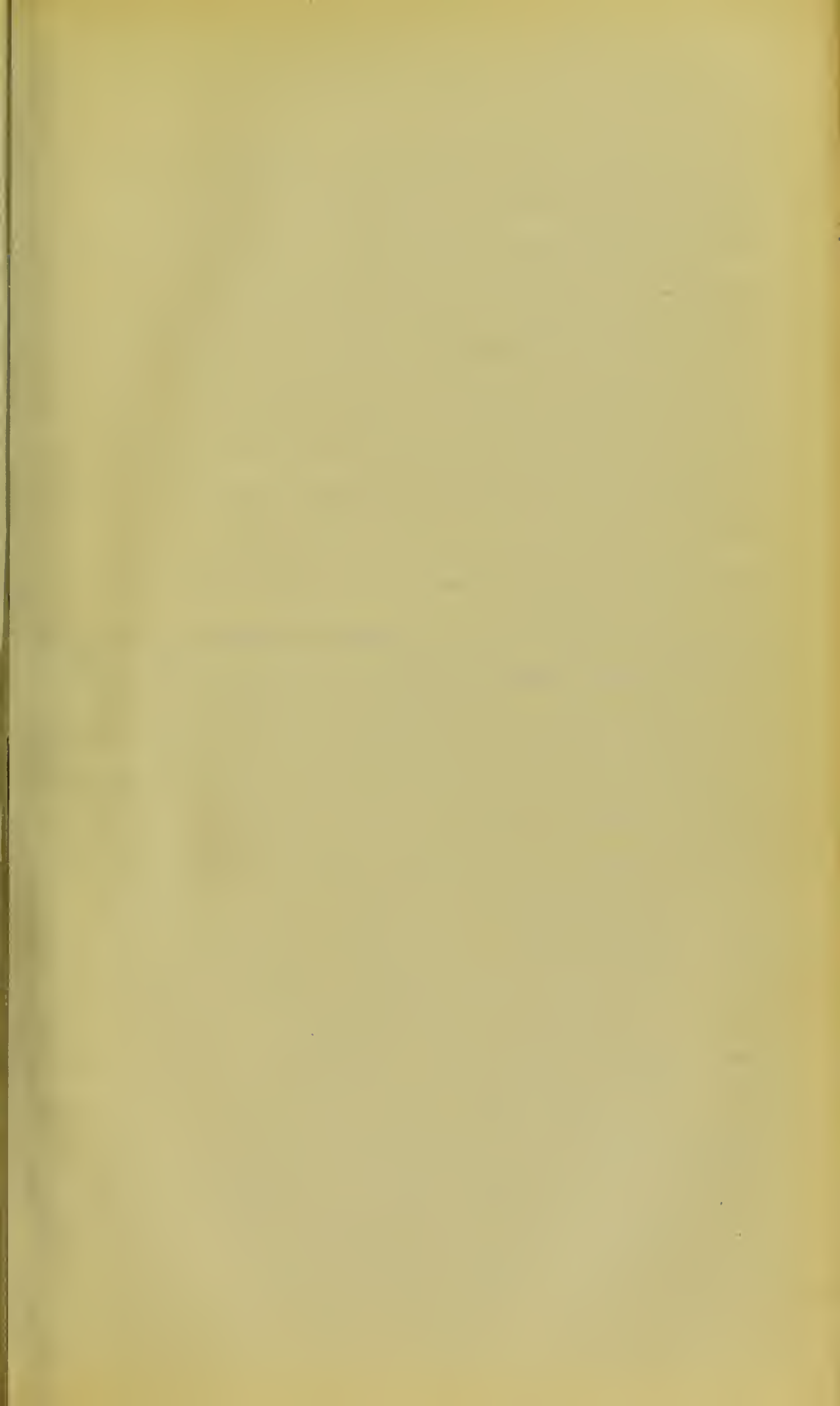
Blunt hooks have been employed.
The Fillet is of use in cases
of these kinds -

Handkerchief with a knot
on one corner -

Put the two fingers put into the
groin is often sufficient -

The head may be fixed in the
passages. This may be extracted
by Melle's grasp, or if not
apply Forceps - apply by carrying
trunk far forward & apply
forceps in front of child -





TRANSVERSE PRESENTATIONS.

1 - 230

DEFINITION.

FREQUENCY.

VARIETIES : SHOULDER, TRUNK, ARM.

DIAGNOSIS.

NOMENCLATURE OF POSITIONS :

Scapula-Laeva-Anterior.

Scapula-Laeva-Posterior.

Scapula-Dextra-Posterior.

Scapula-Dextra-Anterior.

NATURAL TERMINATION in (1) Death of mother, or (2) Spontaneous Delivery.

SPONTANEOUS VERSION : (*a*) above brim, and (*b*) in the pelvis.

MANAGEMENT : Rules for interference.

Transverse Presentations

in 220 or 230 labours -

recognised by palpation of abdomen
specially per examination -

notable points 1. Cervix Uteral is high up

Bag of membrane protrudes &
hangs thro' -

Presenting part not easily
touched & not so large as
head - Shoulder
can usually be felt. May
feel hand (but small points
are generally felt)

Acromion process & scapular
spine can be felt - Line of
clavicle & humerus all can
be felt. 3 radiating lines -

Pass finger into axilla where
ribs can be felt -

2^d hand - absence of heel -
fingers unequal length - thumb
can be separated & folded
into palm - Shake hands
with it & if it "fits" it right
hand & if it needs the your left
hand it is its left hand -



Commonest -
L.S.A



next in frequency
R.S.P

Other parts may present -
Abdomen, thorax etc -

most common is	L.S.A	{ left's right's } course refers to mother as usual in other presentation.
Next is	R.S.P	
or rather	R.S.A	
rather still	L.S.P	

Prognosis dangerous both to
mother and child -
Membranes are apt to burst
early for they are not supported
by head or breech - Having burst
the waters escape most completely
the uterus thus closes on the
child on the cord & on the
placenta - Resulting in
Contractions going on till
uterus becomes inert - By
this time the child is probably
dead - Then the labour pains
recurring after some days the
child may be driven through
being dead & having softened -
Upper portion of uterus goes
on contracting & expels the



child into the lower segment.
Of course this will cause
rupture -

Spontaneous delivery may occur
say one in a hundred. The
practitioner dare not wait for its
occurrence - 2 distinct kinds -

(2) Spontaneous ("evolution") version
+ resulting head presentation
but more frequently breech -
The ~~evolution~~ ^{version} takes place
when the foetus is still
above the brim & in the abdominal
cavity -

- i The uterus must be active
throughout - lower segment
and all -
- ii The lower segment must
be still undilated & there
must be some liquor
amni still present -
- iii The foetus must be still living
or so recently dead so as
not to have lost its resiliency.

Spontaneous Delivery in Shoulder Cases (Very Rare).

LEFT ACROMIO-ANTERIOR.

At first we have oblique position of uterus and fœtus.

Secondly.—Strong flexion of head on trunk and descent of shoulder into pelvis.

Head in one iliac fossa and trunk and breech in the other. At this stage membranes rupture, arm falls into vagina, and hand appears externally.

Thirdly.—Increased descent of the shoulder and protrusion of forearm, doubling with compression of body so that breech is driven into pelvis; as soon as this takes place a movement of rotation succeeds.

The inclined planes of the ischia direct breech backwards into hollow of sacrum. This backward movement of trunk throws head over symphysis pubis.

The right side of head near its base is forcibly pushed against symphysis; the side of neck corresponding to presenting shoulder is fixed behind symphysis, and shoulder itself is fixed under pubic arch.

Fourthly.—The expulsive force continuing can only act on breech and trunk, the shoulder being absolutely fixed. The trunk bends more and more on its side, the presenting chest wall bulges out and makes its appearance under pubic arch.

Lastly.—Movement in a circle of body round fixed shoulder is executed, side of trunk and breech sweep over concavity of perinæum.

This process is normal type of labour in shoulder cases.

- 4) Spontaneous Version in the Pelvis
"Spontaneous expulsion" Douglas -
i Efficient parturient power -
supplemented by acc: powers -
ii The Passages - must have room
below & soft canals -
iii. Foetus must be small, imperfectly
developed or dead - seen in
small second twins.

The movements -

Corresponding to Flexion -
Ear flexed on shoulder & foetus
'compacted' -

Corresponding to Rotation
Back of child comes forward
& hangs over ~~symphysis~~ symphysis
pubis

Corresponding with extension
trunk thrown free - breech presents
Corresponding to restitution

Speedy interference should be had
resort to whenever a "cross
birth" is met with -

L.e -

Nature of Operation.

Indications.

Varieties : Cephalic and Pelvic.

Methods : by posture ; by external manipulation ;

by internal manipulation ;

by combined manipulation.

Stages in Operation : Preliminaries ;

(1) Introduction of hand ;

(2) Changing position of child ;

(3) Extraction of child.

Rules for Podalic and Bipolar Version.

TURNING.

A. Version by external manipulation.

B. Podalic version.

Suitable cases, *e.g.*—

Shoulder cases.

Flat pelvis.

Hæmorrhage.

Prolapse of funis.

Position of patient.

Induction of anæsthesia.

Method of performing the operation.

Three stages—

1. Introduction of hand.
2. Change of position of child.
3. Extraction of child.

Three acts in extraction.

1. Drawing down trunk
2. Liberation of arms.
3. Extraction of head.

C. Bi-polar podalic version.

Turning

safe to Mother and Child -
always turn in shoulder presentation
Some face cases turn -
sometimes in cases of Inertia -
in pendulous belly where head
not easily grasped by forceps -
where you have forgotten your forceps
where a dangerous complication
threatens - as in haemorrhage
as in convulsion - where Uterus
has ruptured - Where the Mother
is dead before Caesarean
section by turning -
in deformities of the Pelvis,
Tumours (fibroid & ovarian); Turning
is dangerous where you have
a universally contracted pelvis -
(In Justo Minor the trunk can
be born but certainly the
head will stick) - ~~2~~
In premature induction for deformed
Pelvis turning should be adopted -

PODALIC VERSION.

I. STAGE.—INTRODUCTION AND SEARCH.

How to do it.

1. Having previously diagnosed the position,
2. Insert hand as a cone into vagina.
3. Rupture membranes.
4. Enter uterus gently, manipulating during intervals of pains only.
5. Search for feet, so that the palmar aspect of the hand corresponds to the abdominal surface of the foetus.
6. Seize one foot.

Difficulties to be met with.

1. Position not known.
2. Narrow vagina.
3. Arm in vagina.

II. STAGE.—CHANGE OF POSITION.

How to do it.

1. Extend leg gently.
2. Pull foot to vulva.
3. Bring vertex of foetus into fundus of uterus.

Difficulties to be met with.

1. Uterine contractions.
2. Head engaging with foot.

III. STAGE.—EXTRACTION.

How to do it.

1. Draw down trunk to vulva.
2. Liberate the arms.
 - a. Sacral arm.
 - b. Pubic arm.
3. Extract the head.
 - Smellie grasp.
 - Prague seizure.
 - Supra-pubic pressure.

the breech is always easier to bring down than the head.

Prognosis (if cervix has dilated + membranes have not broken) ~~are~~ is good. Best time (in case of flat pelvis say) wait for dilatation of cervix. But always interfere before the membranes have broken. Version may be brought about by posturing the patient. Bipolar Version done bi manually. Podalic version done mostly with the hand that is in utero -

Patient is placed on left side with knees drawn up + hips at edge of bed - Anaesthetics must then be given. Bladder + Rectum are to be emptied - then make quite clear as to the presentation. Is the back to the left or the right. The hand that has to go in to the uterus is the hand that has to pass over the ant. of the infant.

in left position use left hand
in right position use right hand
edge the position of the child by auscultating
heart. Introduce hand just
when pain is on -

Rules for Podalic Version

~~Pass in~~

Introduction of Hand

Pass in through vulva as a
flattened cone, if pains present
during a pain -

Direct it forwards in axis
of outlet, cavity, & brim -

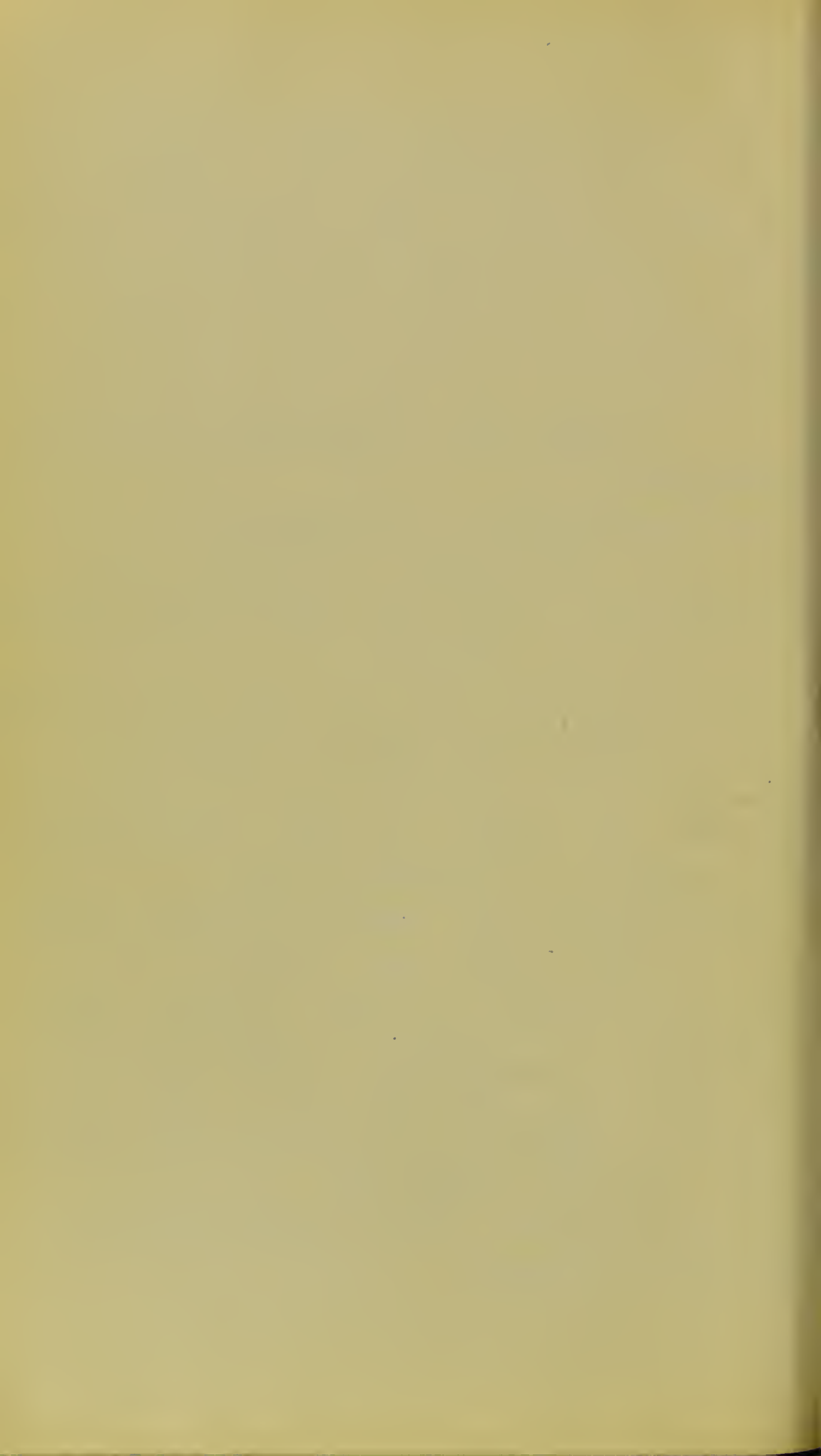
If the os still small introduce
the fingers gradually -

Rupture the membranes at
or near the os uteri -

Advance the hand along the
anterior surface of the child -

If force required press on the child,
not on the uterus -

Lay the hand flat on the child
during a pain -



Changing the Presentation

1. Seize one or both of the feet or knees between the fingers, usually the most distant foot or knee -
2. apply one hand outside to the uterus and assist version -
3. Move the feet downwards with a slight wavy motion -
4. Bring the part seized down over the front of the child
5. act only during the intervals -

VERSION by combined external and internal manipulation

Rules

Pass two fingers of one hand through the os uteri, so as to feel the presenting part, and place the other hand on the Fundus Uteri. With the fingers in the os gradually push the presenting part to one side, while the other extremities of the foetus is pushed in the opposite direction by the



- hand on the Fundus -
3. Apply pressure on both poles of the foetus in the intervals between the pains, and during the uterine contractions, endeavour simply to keep it in its new position -
 4. Push and tilt the foetus over in such a direction that the body is flexed and the podalic extremity is bent towards the face -
 5. Continue the turning process as part after part comes to the os Uteri - Until the knees are within reach of the fingers, the trunk being at the same time pushed down by the hand placed externally. If membranes still unruptured rupture them now -
 6. Shift the external hand from the Fundus Uteri and apply it to the lower segment of the Uterus so as to push the head upwards.
- [This is most important]

Seize one knee between the fingers or hook it down with one finger and draw it through the OS Uteri -

Then conduct as a case of turning by internal manipulation.

I Extraction of Child

Leave the case to nature if the breech has entered the Pelvis.

Conduct case as a footling one.

If necessary hasten the delivery taking care to keep the contracting uterus in contact with child's head.

Effect extraction of the head from the Pelvis: -

(a) with Hands

(b) with Forceps

May endeavour to save the child by admitting air into the uterus -

OPERATIONS IN TRANSVERSE CASES WHERE TURNING
IMPRACTICABLE.

EVISCERATION.

Instrument: Scissors.

DECAPITATION.

Instruments: Blunt and Sharp Hook ; Ecraseur ; Cord ; Scissors ;
Knife.

Stages in Operation.

SPONDYLOTOMY.

Instruments: Spondylotome or Bone-pliers.

SPONDYLOLYSIS.

Instrument: Basilyst.

Where turning is impossible -
You must prevent rupture of
lower uterine segment give
chloroform so as to paralyse
the uterus completely - Then
if turning impossible the
mothers life must be saved
at the expense of the infant -

Erisection oldest operation -
Unsatisfactory as head is still
left whole -

Decapitation is the most
commonly done & is
very useful - Blunt hook is
better than sharp one - (Braune's
blunt hook Vienna)

Pondylotomy
Forceps one blade sharp &
one blunt & pointed -

Spondylolysis
C. Basilyst -

COMPLEX LABOURS.

Complications may arise

A. On part of mother.

B. On part of child.

COMPLICATIONS ON PART OF MOTHER.

1. UTERINE HÆMORRHAGE.

Periods at which this may occur.

Hæmorrhage in last months of Pregnancy or First Stage of Labour
may be (a) Unavoidable, (b) Accidental.

2) UNAVOIDABLE HÆMORRHAGE : PLACENTA PRÆVIA.

History.

Frequency.

Causes.

Symptoms.

Diagnosis.

Prognosis to mother and child.

Treatment : Palliative and Radical.

Radical treatment by

- (1) Evacuation of liquor amnii ; *not good*
- (2) Delivery of child by turning, forceps, embryulcia ;
- (3) Detachment of placenta ; partial or (rarely) complete.
- (4) Artificial dilatation of cervix.

Haemorrhage

May occur at any stage from before 6th month to post partum.

2) Unavoidable as seen in Placenta Praevia = placenta covering os internum. Is absolutely central in 42%. In other cases ^{it} is partial, where placenta is partly or wholly implanted in the lower uterine segment. In G.P. you meet it once in 1000 cases - More frequent in xparae than in iparae. Most frequent about age of 30. If it occur in iparae she is probably above 30. The uterus having undergone morbid changes in xparae (subinvolution etc) causes this condition. Also seen where the uterus is displaced.

When labour sets in the haemorrhage is inevitable (if not before) -

May occur ~~at~~ one month or less before labour sets in -

When the uterus begins to contract the os openings up + membranes



or 2"-3" in lower uterine segment becomes detached. In P.P. the placenta is separated instead of the membranes -

The haemorrhage occurs during the separation of a lobule - But when the ~~placenta~~ lobule is completely detached the haemorrhage ceases for the time -

However the haemorrhage may occur from the bare wall of the uterus - If the wall is not properly contracting or the blood properly coagulating - This haemorrhage will take place after the separation of the lobule -

Symptoms

1. Haemorrhage - Some bl. ~~comes~~ out at each pain - The P.P. is diagnosed by P.V. Something thick between child's head + his finger - The Placenta feels stringy -
2. Patient Pallid. Pulse feeble - Patient may be sick.



Prognosis The flooding may be fatal -

The danger is all the greater where the cervix is imperfectly dilated or where the uterus is imperfectly contracting -

Also - the delivery is dangerous - Turning etc being more dangerous in this than normally -

Dangers to child -

1. Asphyxia

air may enter the veins of the patient & so prove fatal -

Treat

Palliative - Plug vagina, put at rest, regulate diet, keep bowels empty, & ~~and~~ administer opiates to delay uterine activity -

Most of the fatal cases are due to repeated & prolonged palliative treatment - Then when the labour does set in its worse than ever - \therefore be prepared to treat radically.

1. Put in an india rubber bag & leave it in for about 3 hrs



is expands the cervix + stops
the haemorrhage -

2. Put dilator into cervix to
expand it + also to stimulate the
uterus to contraction -

vacuation of Lig Amnii causes
uterus to contract but is not
good practice -

The best thing to do is to
use bi-polar version + bring
about footling presentation -
Then when leg is in vagina
you have control of the
labour + haemorrhage. The
Child itself plugs the haemorrhage.
Only bring down one leg the
other leg giving more complete
dilation for the transit of the head.

By passing finger between P. +
wall separate the lobule where
haemorrhage is occurring - Then
if more haemorrhage occur
separate another lobule or
two -

Artificial dilatation of cervix.

(b) ACCIDENTAL HÆMORRHAGE.

Pathology. Symptoms and Diagnosis.

Rules for Treatment.

HÆMORRHAGE IN the Third Stage.

Retained Placenta due to

(1) Inertia of Uterus : Causes, Diagnosis, Treatment.

(2) Irregular or hour-glass contraction : Causes, Diagnosis,
Treatment.

(3) Hypertrophy of Placenta.

(4) Morbid Adhesions of Placenta : Rules for Treatment.

HÆMORRHAGE AFTER delivery—Post-partum.

Causes.

Time of Occurrence.

Treatment.

b) Accidental Haemorrhage

Patient generally refers it to some 'accident' fall, sneeze, coughing, etc etc.

Giving to proclivity to this placental separation we have --

morbid conditions of the placenta seen in Albuminuria, heart disease, syphilis, + blood poisoning. The separation may take place at margin or in center of the placenta -

Symptom \therefore vary

- Maybe great loss of bl -

When the uterus contracts (ie during pain) the os is plugged + so the haemorrhage is interrupted (just the opposite in placenta praevia)

Haemorrhage may be concealed - Coagulates between uterine wall + membranes + only serum escapes

Blood ~~is~~ flowing into cavity of foetal membranes + so none showing at all -



Patient has sickness, vomiting,
pale, collapse - very weak pulse.
+ Blood may be confined
within the placenta area &
so not shown - Retro-placental
haematoma being formed -
Slight collapse & intense pain -

Diagnosis made by symptoms +
abdominal examination -

P.R. Cervix may be occupied by
blood clot - Thro' lower center
of uterus foetus felt &
ballotment able to be performed
(not so in P.P.)

Prognosis extreme danger both
to the Mother & to the Child -
mortality v. high

It has been said that shortness
of the umbilical cord causes
this condition - but the real
cause is constitutional -

The most dangerous cases
are where the haemorrhage
does not show -



the mortality is even higher for the child than for the mother - because the placenta is separated - only consider the interests of the mother -

Rules

Enjoin rest quietness + coolness
Rupture the membranes when the os is undilated, passages rigid - haemorrhage persistent but not profuse -

Hasten dilatation with bag or sponge tents -

Whenever dilatation sufficient and haemorrhage persistent turn the child or use forceps
If haemorrhage be great dilate os by incisions if necessary + deliver by turning

Cause the uterus to contract strongly after the expulsion of the infant.



Haemorrhage in 3rd Stage

Retained Placenta -

great risk is haemorrhage - especially in partly separated placenta.

Causes of retained placenta: -

Inertia of Uterus is the commonest cause - It may be constitutional, too frequent labours or abortions, uterus below par, or more often due to mismanagement in the labour as 1st stage too protracted or 2nd stage too precipitate or interference in 2nd stage hurrying it.

Symptoms. Pains in abeyance - then haemorrhage takes place generally in cavity of uterus & not showing - Patient becomes rapidly weak, turns head to fr: side to side - Uterus is distending then when it gets something to contract on suddenly you get a great gush of blood &



then may gradually distend again with blood.

2. Irregular contraction
Active in some parts ~~especially~~
~~at placenta~~ + paralysed
in others. Thus placenta
left in a pocket -
abdominal examination shows
you the irregularity of Uterus -
Pass hand up cord +
you will feel the imprisoned
state of the placenta -
Causes as above -

Treat Ergotin injecting 5grs
+ repeating in 20 mins -
also knead the Uterus - +
Massage it -

RULES

- If structures be easily dilatable
and placenta half out extract
immediately
- If structures be not easily
dilatable give chloroform deeply
and dilate by introducing



the fingers one after the other
Push down the Fundus Uteri
by the one hand placed externally
while the other is used to dilate
the stricture and keep up steady
compression to the external hand

1) Hypertrophy of Placenta

2) Morbid Adhesions of Placenta.

Rules for Treatment

apply strong pressure to the
uterus externally with one or
both hands & give Ergot of Rye
Pass in one hand according
to rule for turning and cautiously
separate the Placenta, if
the adhesions are firm on
the Placenta then it must
be gradually separated
round the margins -

Extract the Placenta when
separated and before removing
the hand force Uterus to contract.
If impossible to remove the
whole Placenta remove carefully
all that can be got -



Don't try & pull it away when partially separated - Definitely detach it first.

Post-partum Haemorrhage occurs usually within an hour of the expulsion of the Placenta. Cause imperfect contractions of Uterus due to the labour having been a long one or the birth precipitate - Where there are twins pphaemorrhage is liable because Placenta is large area - Bad attachments of the Placenta give ~~to~~ liability to pphaemorrhage - also liable in ~~to~~ Kyphotic pelvis & other malformations. The arrest of the haemorrhage is due to 1. Uterine contraction
2. Uterine walls come into apposition
3. Coagulability of the blood.
~~4~~ Imperfect evacuation of the Uterus will cause the haemorrhage imptom the escape of the blood. Slow oozing or in gushes -



or haemorrhage may be concealed
& as in 3rd Stage haemorrhage
a sudden contraction & gush -
Treat

1. Keep up Uterine Contraction
by hand or pad and if there
be any tendency to relapse
by Ergot or injection -
2. Carefully prevent the Patient
from moving her head or
making any muscular exertion.
3. Keep her cool quiet and
perfectly free from all excitement
If she is restless & irritable
exhibit opium so as to act as
a general sedative -
4. Supply cordials & stimulants
if her state of exhaustion require
them - Champagne etc -
5. Hypodermic injections of Ether
or of salt solution,
transfusion of blood -
Watch her sedulously for hours
and ascertain at intervals
if there be any recurrence
of haemorrhage -

RUPTURE OF UTERUS.

Frequency.

Occurrence (a) in pregnancy, (b) in parturition.

Symptoms : Premonitory ; of actual occurrence.

Diagnosis.

Treatment : Prophylactic ; after Rupture.

LACERATIONS OF OTHER ORGANS.

Of Cervix, Vagina, Perineum, etc.

DISPLACEMENTS OF UTERUS.

1. Inversion.

Definition : Period of Occurrence.

Causes : Symptoms : Diagnosis.

Treatment (a) when recent, (b) when long-standing.

2. Prolapsus.

3. Hernia.



COMPLICATIONS FROM DISEASE OF HEART, LUNGS, BLOOD-VESSELS.

PUERPERAL CONVULSIONS : ECLAMPSIA.

Time of Occurrence. *Latter months of Preg - Most seldom in Puerperium*

Etiology. *Labour brought on*

Results and Prognosis.

Treatment : Prophylaxis.

Management during attack.

Operative interference.

Premonitory sym : Nausea, vomiting, restlessness, irritability, disturbance of vision, marked headache, dizziness, marked tremor, some epigastric pain, numbness + tingling - also albumin in urine - The fit is like epilepsy - 1st short tonic stage. Muscles rigid - lasts a few seconds 2nd - Clonic convulsions - twitching of face, eyes rotate frs side to side

Chest Complications

avoid any thing that would heat, fatigue or oppress patient -

Prevent her making any muscular exertion to promote labour - anaesthetize. If the symptoms be at all urgent have the passages dilated and deliver by turning or Forceps - Do not empty the Uterus too suddenly - apply a binder previously and tighten it as the Uterus is evacuated. In Mitral & stenosis favour haemorrhage in the third stage - & aortic.

Puerperal Convulsions

When there is albuminuria before labour keep the patient on milk diet, administer diuretics, and only induce labour if symptoms be marked and severe -

Loosen dress, prevent self injury allow access of fresh air -

Bleed in special cases -

open bowels freely & speedily - act if possible on kidneys & skin control muscular action and subdue nervous irritability and arterial

Inversion result 1

1. Pulling on cord
2. Spontaneous

tongue protuded - Face livid & foam
often

from 1
c deep
3rd &

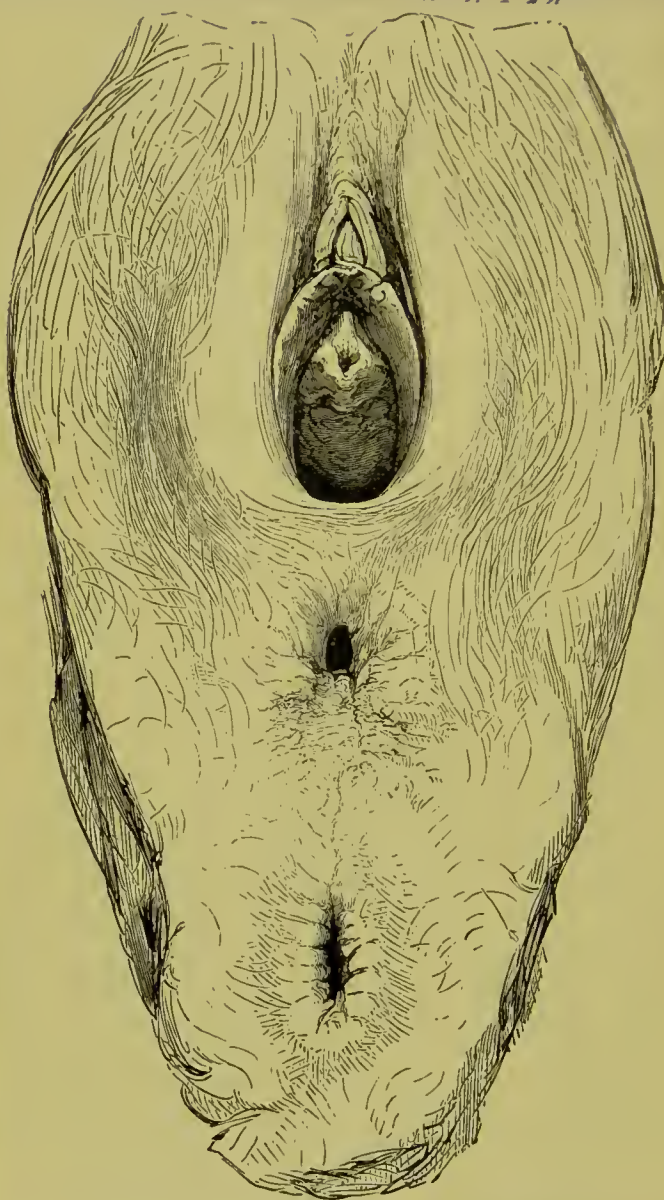
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+ tube cases - our may be abant. The fits
set up uterine action. Foetus dead in 50%
If the foetus dies the albumin disappears
Urine. Results 25% die 75% recover
Death by acute asphyxia or more gradual
sphyxia & edema. Also cerebral apoplexy

usion by chloroform, chlorates,
iates, pilocarpin;

If passages be in a fit state use
forceps especially if there be repeated
paroxysms -

If foetal head high and passages
unprepared, rely on time + relaxants,
but if there be immediate danger
deliver by dilatation of Cervix, Forceps,
turning or embryulcia -

In after treatment keep patient low
and quiet and bowels + bladder free -



Heraplegia may follow - or mania or insanity may result.

Prognosis. is worst if during pregnancy most favourable if in puerperium -

1. Severity & frequency of the fits -
2. Does patient regain consciousness
3. Progressive rise of T° unfavourable
4. Duration of fits -
5. Condition of pulse
6. The amount of urine

P.M appearances not constant. Anaemia + oedema of brain, may get hyperaemia of meninges. Kidneys show inflammatory changes ~~not~~ interstitial nephritis. Oedema of lungs. In liver some acute yellow atrophy.

Etiology of Eclampsia

disposing causes

1. + parae
2. twin labours
3. Hereditary influence

mediate cause:- various theories.

Traube Rosenstein - due to cerebral ~~anemia~~ anaemia - arterial pressure increased + serous effusion into ~~of~~ brain compressing cerebral vessels + so anaemia - coma result of anaemia of upper + convulsions of lower centers - this theory not much good -

Pressure on ureters by pregnant uterus. Tyler Smith. A neurosis - special irritability result of growing uterus - + explosions of nerve energy -

General toxemia - retention of some poisonous products ~~by~~ in the system the kidneys not acting properly by removing it - some say this substance is Urea, Carb of ammon etc. It is probably a complex poison.

* Clear out bowels by placing
Croton oil on tongue -

a Microorganism has been suggested.
an unknown chemical substance
acting on the kidney & so causing
the change in the kidney as a
secondary condition -

treat

Prophylactic treat.

Examine urine during last two
months of preg: for Albumin -
If present put patient on milk
diet & wear very warm clothing -
Encourage free action of skin
by diaphoretics & warm baths -
& give diuretics & purgatives -
- premonitory symptoms very marked
induce labour -

During the fit prevent patient
from injuring herself -
Put cork far back between
patients teeth to prevent tongue
being bitten -
Give chloroform whenever
a fit comes on -

Chloral & KBr gr 20-30 & 2
as small enema.

say in $\frac{3j}{i}$ - $\frac{3j}{ii}$ of aqua -

Put Patient in hot pack, bottles
or steaming apparatus -

Patient is unconscious so
don't burn or scald her -

St foementation over kidneys -
turn heart with sumpism if any
sym: of failure -

Morphia has been used by some
if there be no severe or chronic
kidney affection -

Bleeding is again coming into
fashion - In plethoric cyanosed
patients it must do good -

If labour is commenced deliver patient
artificially. If it has not commenced
in the severer cases induce labour
- empty -

If after labour treat with Chloral
KBr etc -



prolapse of cord in \pm para the head presenting there is some deformity the pelvis to be looked for -

Rules of Management

If pulsation of cord entirely ceased do not interfere -

If you discover it before the membranes rupture

1) Endeavour to return it above foetal head

2) If attempt fail, and passages well dilated turn the child by Bi-polar Method -

If membranes already ruptured and head entering the pelvis endeavour to return the cord and retain it above the head by:-

- a. Fingers
- b. Sponge
- c. Rough body
- d. Appropriate instrument
- e. Hooking over a limb
- f. Postural treatment

If you cannot return and retain the cord place it in the sacro-iliac

No 1138 Twin Labours

Both heads presenting	49%
Head + Breech	31.70%
Both Pelvic	8.6%
Head + Trans:	6.1%
Breech + Trans:	4.1%
	0.3%

space which is emptiest.

If necessary hasten delivery

Great tendency to prolapse again after replacing the cord.

Plural Births

is a rule easy & uncomplicated.

But may be rendered very difficult.

Diagnose - inspection shows sometimes

longitudinal groove - Double heart sound on auscultation. You may

p & v some feel two presenting parts.

Each twin may have separate bag

& membranes - double placenta -

Common chorion but double amnion. single placenta -

Common chorion & amnion placenta always single -

Resuscitation

Slow first stage

Inertia in second & third stage & so liability to Post partum haemorrhage. The large placental area makes this haemorrhage still more dangerous.

25% operative interference for the twin must be employed - albuminuria is not uncommon - clampsia 10 times more frequent than in single pregnancies.

Child

1. Nearly always premature
2. If not always so: & not so well developed as single child.

Management of Twin Cases

Interval between delivery of twins usually less than 1 hr - after first is delivered pains stop for a time then come again - Don't tell the patient on making examination of after birth of No 1 of the existence of number 2. You must tie cord of No 1 with two ligatures or you will bleed No 2.

In treating No 2 - pains will come on in about 1 hr - If ~~not~~ at end of $\frac{1}{2}$ hr pains have not come on use friction over

abdomen to excite - If no pains
at end of 1 hr rupture
membranes and deliver artificially -
the nearer N°2 is born to N°1 the
easier -

After birth of N°2 examine the
abdomen + uterus for N°3 -

Two bags of membranes may present
at same time - If one ~~contains~~
presents head + one breech
rupture the head one - If both
heads rupture the most accessible -

The two heads may enter the
pelvis + get jammed - If you
cannot get them unjammed you
must break one up - or the
foetus may get jammed in
various other position - Locking
of heads coming down together
or locking of heads to one
breech & one head presentation -
In rare cases the first foetus
is expelled before viability -
Then if placenta + membranes
be born you can allow N°2
to go on to full time -



No. 1.

Double Monsters

2 nearly separate bodies united in front by thorax or abdomen. Feet or heads may present -

Former being much more favourable. If both heads present better to turn - After body is born carry the trunk well forward so as to deliver posterior head first - If not decapitate posterior head -

2 nearly separate bodies united back to back - generally at lower part of spinal column. Feet presentation most favourable. If any jamming turn & decapitate if necessary -

Double headed monsters - When one head is born, body follows doubled up by side of head & if pelvis is roomy delivery follows naturally - If not decapitate one head & put back "loose" head & deliver

Bodies separate but heads partially united - Whatever the presentation perforate &

break up the head of the child -

Apnoea Neonatorum

should cry vigorously + so establish
respiration - The cord may be
vigorous in its beat or not -

causes 1. Congenital debility of foetus
arising from imperfect nutrition
as from placental disease
seen in Syphilis + Albuminuria.

2. Premature birth -

3. Pressure on cord or
separation of placenta

4 where uterine contractions
have been long + continuous -

No 3 foetus may be very anaemic
the foetal heart driving bl: out
but pressure preventing new bl: coming
in -

5. Pressure on head causing
haemorrhages ~~to~~ as in
instrumental labours

6. Mechanical obstruction
(tumours etc) preventing
respiration -



Types - 1. Pale - Asthenic -

2. Livid - Sthenic -

No 1 child's body is extremely pallid - limbs relaxed & muscular tone absent - lower jaw hangs on breast - Reflexes absent - may be faint effort to breathe -

Pulsations of cord very faint -

No 2. Child dusky red or purple especially face & upper part of trunk - lips swollen & dark colour -

Limbs firm & rigid - Pulsation of cord & heart strong & vigorous -

Type met c in head injuries & also recent pressure on cord - if no hae: into brain prognosis good.

Treatment -

1. Clear mouth & pharynx of Mucus with finger & towel - then hold child by heels & swing backward & forward for a second or two.
2. Remove child from bed & give free access of air - apply slapping or vigorous

Schultze

rubbing over thorax will start
respiration - If not rub into
skin whisky or brandy -
in No 2 (divid) let a little blood -
If breathing does not start
yet hold ammonia before
nostrils - Hot + cold bath -
If these fail in No 1 lose no
time to above methods but go
on here - Two methods -

A. Sylvesters Method

B. Schultze's Method (usually adopted)

Have a towel round the child -
Alter position of child 10-15 times
a minute - After say 2 mins
put child back in hot
bath to bring back T° -

In case is hopeless till
the heart has stopped beating.

Mouth to mouth insufflation -
place handchief over foetus'
mouth + blow down not
so strongly -

Insufflation of air to gum
elastic catheter + so
intubation of larynx -



Haemorrhage into Cranium

1. Cerebral Apoplexy
 2. Meningeal Apoplexy
 - a. Between dura + cranium
 - b. In cavity of arachnoid
 - c. beneath arachnoid + in meshes of pia mater -
- cause - some obstruction of circulation during labour -

Symptoms

1. Convulsions - coming on few ~~of~~ hours after birth -
2. Paralysis

Tumours on head of newborn

1. Caput Succedaneum -
Effusion of serum some bl. stained.
2. Cephalo-haematoma
not generally present at birth
one or two days elapse before it is noticed -
Increases gradually + may extend over whole parietal bone -
But NEVER crosses fontanelle + a suture -

EFFECTS OF LABOUR ON THE INFANT.

APNŒA NEONATORUM : Still-birth.

Causes. Symptoms.

Rules for Management.

HÆMORRHAGE INTO THE CRANIUM.

(1) Cerebral Apoplexy.

(2) Meningeal „

Symptoms.

TUMOURS on HEAD of new-born child.

(1) Caput Succedaneum.

(2) Cephalo-haematoma : Pathology and Treatment.

FRACTURE AND DEPRESSION OF CRANIUM.

INJURIES OF LIMBS.

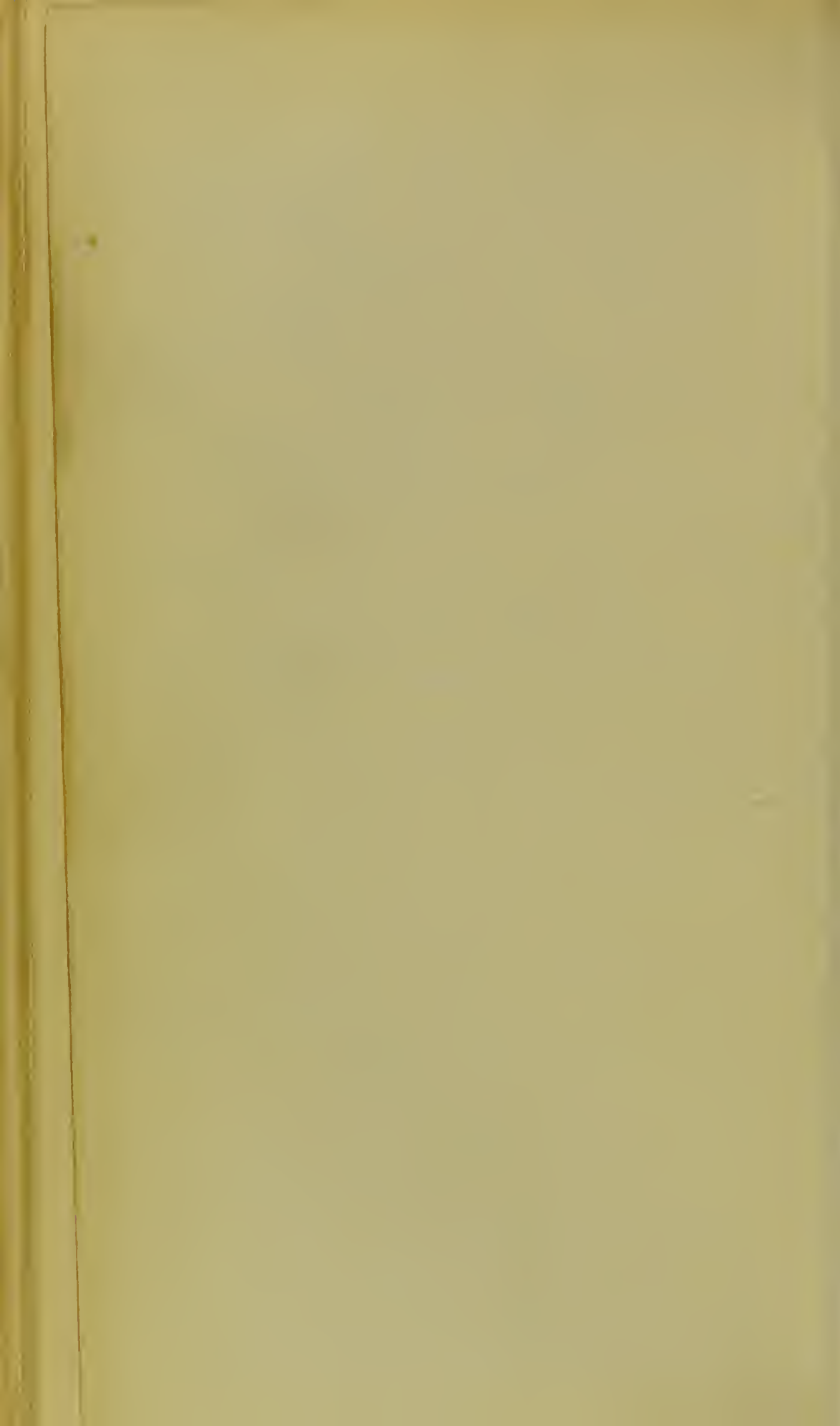
AFFECTIONS OF UMBILICUS.

AFFECTIONS OF MAMMAE.

It is underneath the pericranium
+ the pericranium is attached
to fontanelles + sutures -

The swelling does not pulsate
(as an encephalocell) + does
not get larger when child cries -
+ cannot be replace on
pressure -

Prognosis tumour if left
alone slowly absorbed -
If abscess forms poultice
+ open abscess when
necessary -



inspired liquids pour rapidly out of the respiratory passages. A very powerful inspiration is then produced by extending the body of the child by swinging it backwards, so as to return it to its previous position.

(f) *Howard's Method.*

In this method the child is laid upon its back on the left hand of operator, the ball of whose thumb supports back and extends the spine, causing the shoulders to droop and the head to bend downwards and backwards.

The buttock and thigh are supported by the operator's finger. The thorax is then simply grasped by right hand ; with this hand and the other affording counter-pressure, the chest is to be compressed and allowed to expand at the rate of from 7 to 10 times a minute.

STILL-BIRTH:

APPARENT DEATH OF CHILD.

FŒTAL ASPHYXIA, as in breech cases.

APNŒA NEONATORUM.

FŒTAL APOPLEXY.

Sometimes characterised by—

- (a) Discoloration of skin.
- (b) Flabbiness of flesh.
- (c) A mortal pallor.
- (d) Limbs pendant and flabby.
- (e) Lips pale.
- (f) Lower jaw hangs down.
- (g) Heart does *not* palpitate at all, or if so very feebly.
- (h) Sometimes cries and moves at birth, but falls back apparently lifeless.

At other times characterised by—

- (a) Vivid redness of face and upper parts of body.
- (b) Prominence and injection of eyeball.
- (c) Swelling of countenance.
- (d) Skin dotted with bluish spots.
- (e) Head swollen and warm.
- (f) Lips tumefied.
- (g) Pulsation of heart strong, sometimes feeble.

HYGIENE OF INFANCY.

FEEDING OF INFANT : LACTATION.

Changes in Mammae during Pregnancy and after Parturition.

Composition of Milk. Causes affecting its Quantity.

Three Stages of Nursing.

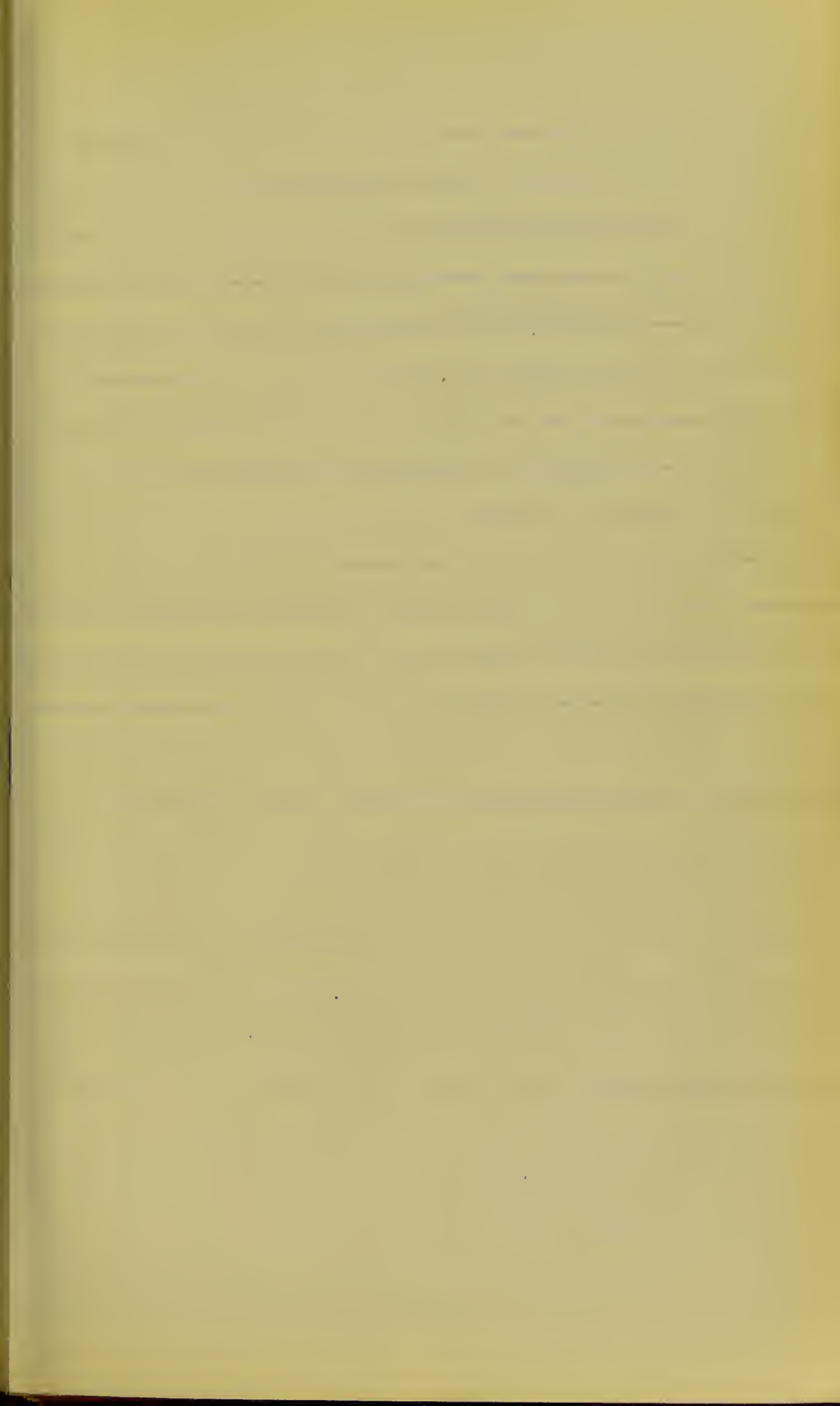
Dentition.

Wet-nurses : Points to be looked at in choosing one.

Artificial Lactation.

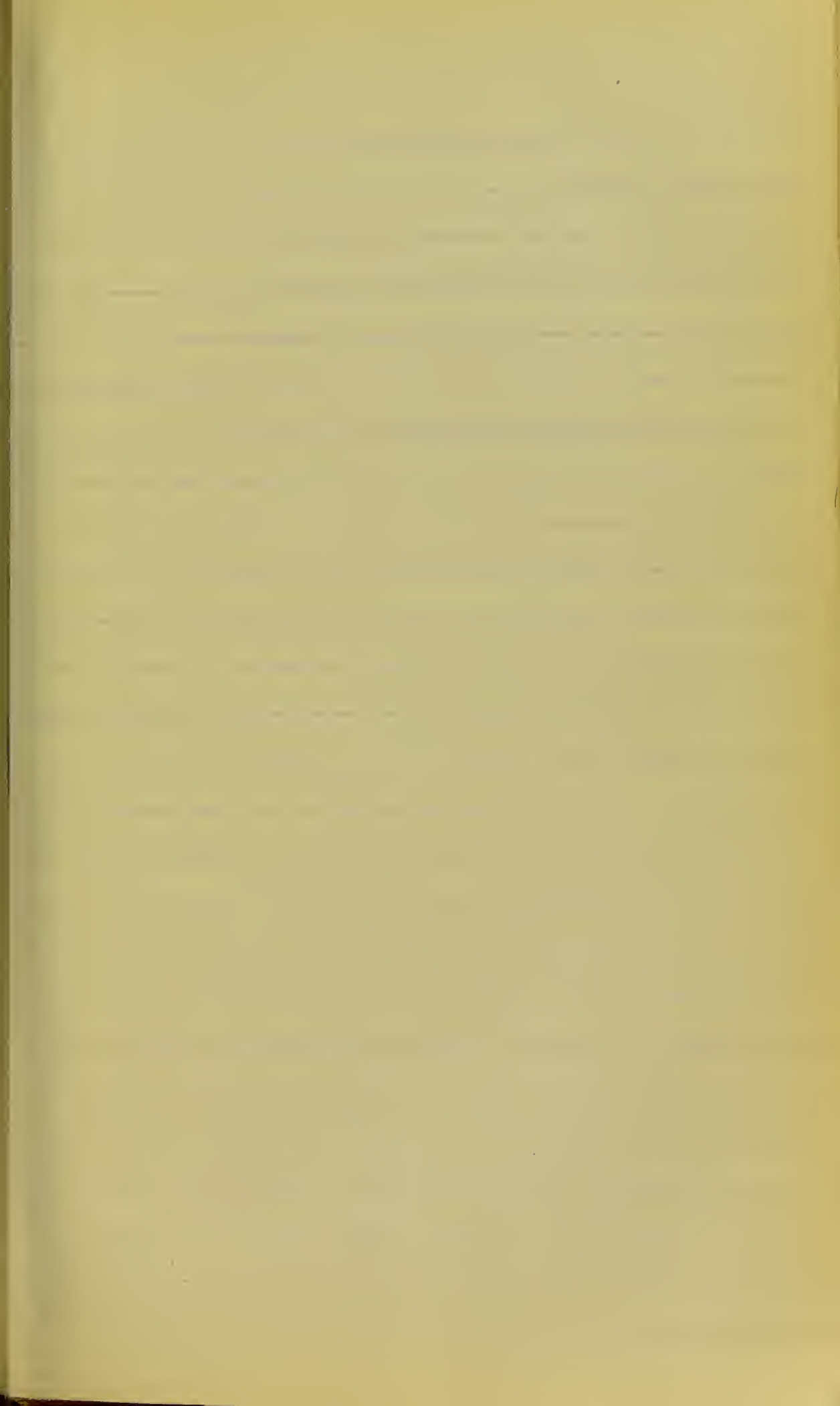
ATTENTION TO CLEANLINESS : DRESS OF INFANT.

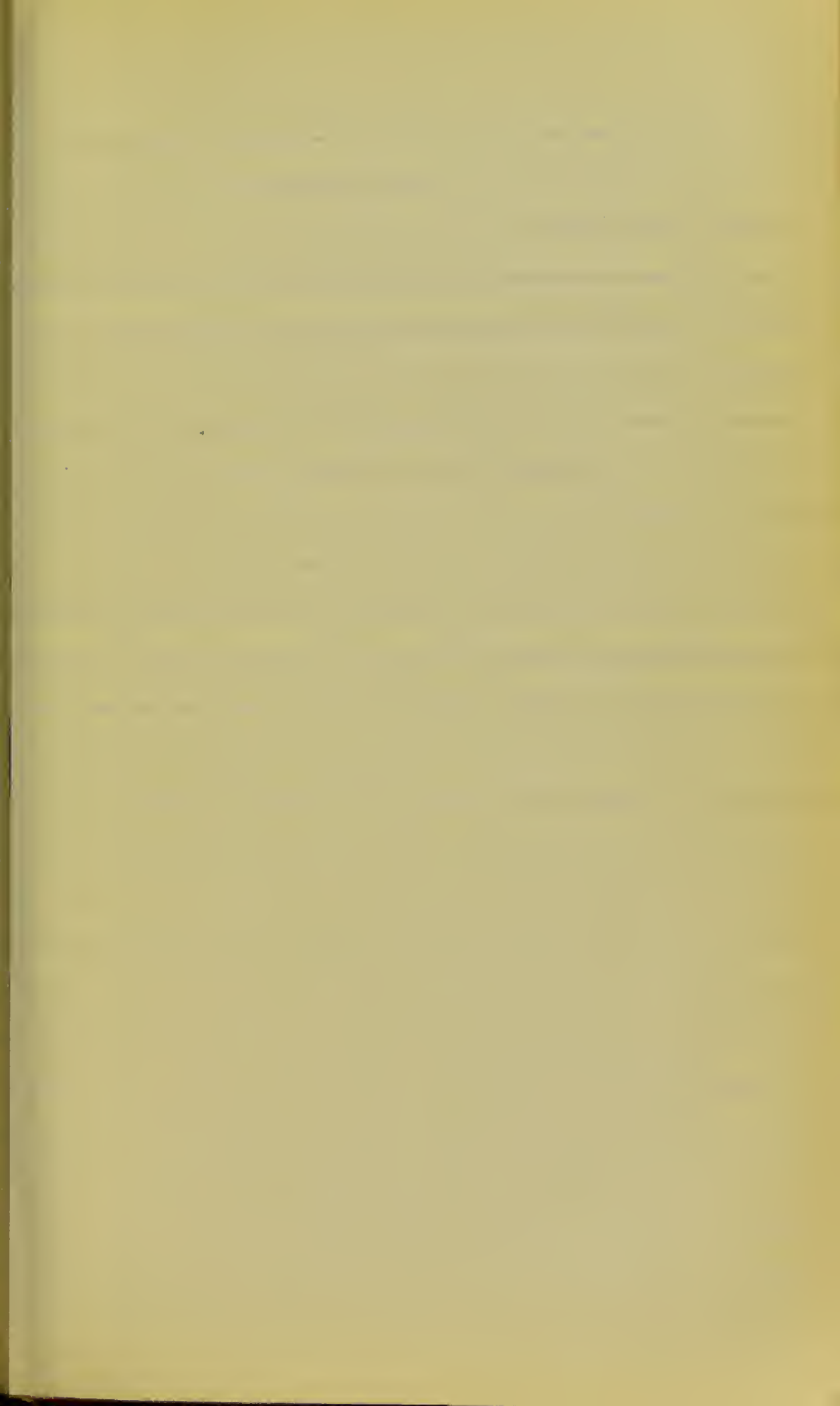
REGULATION OF SLEEP AND EXERCISE.

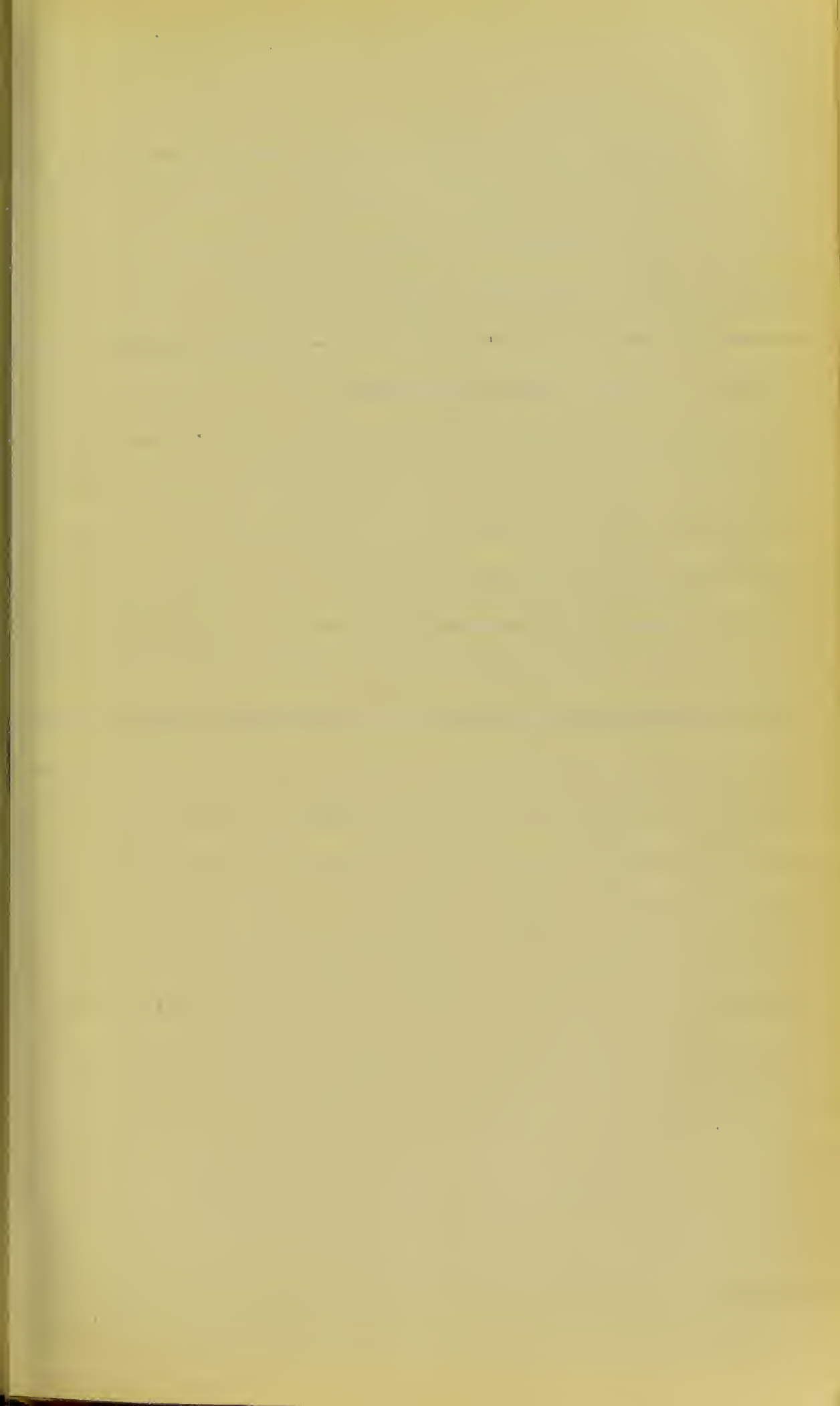


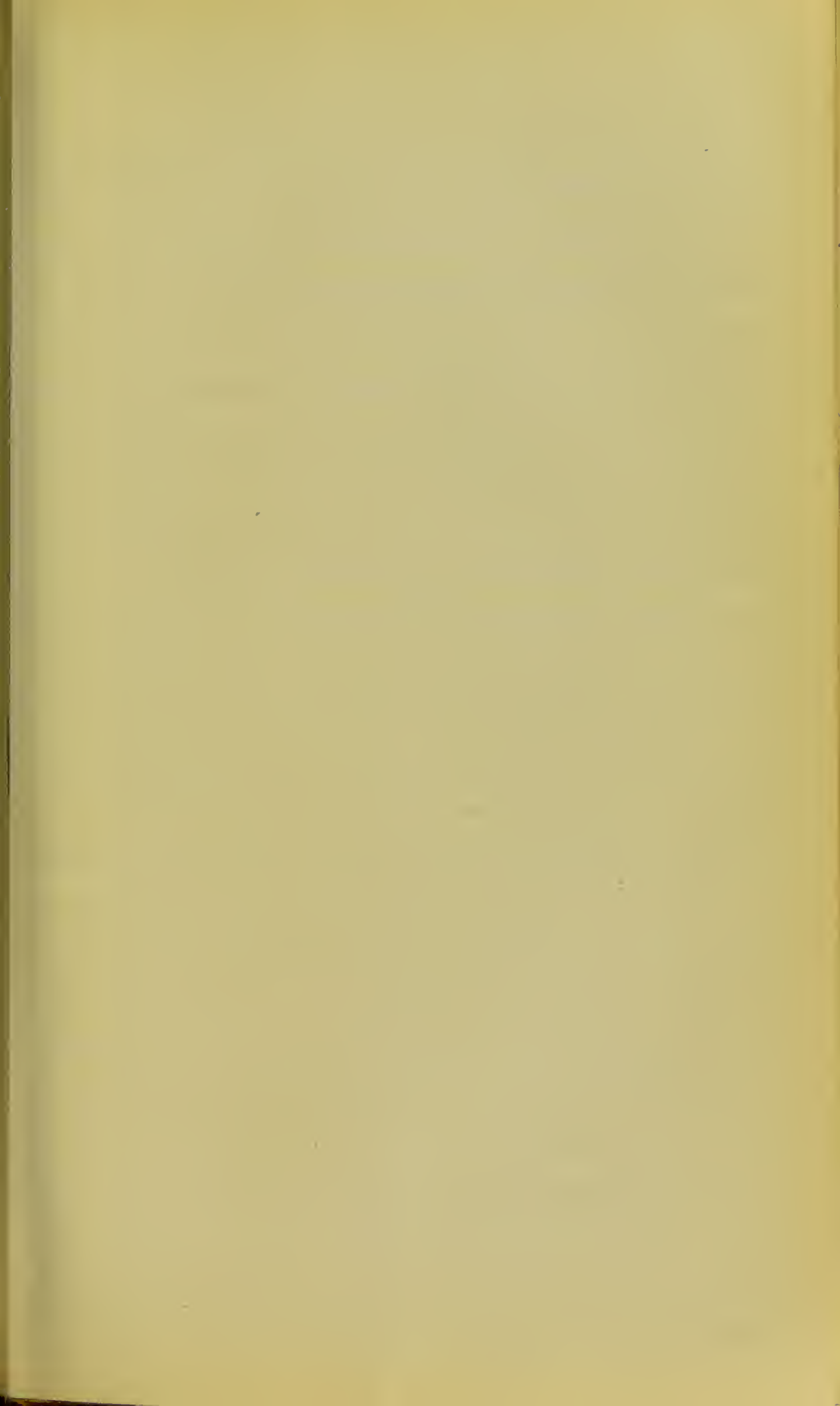


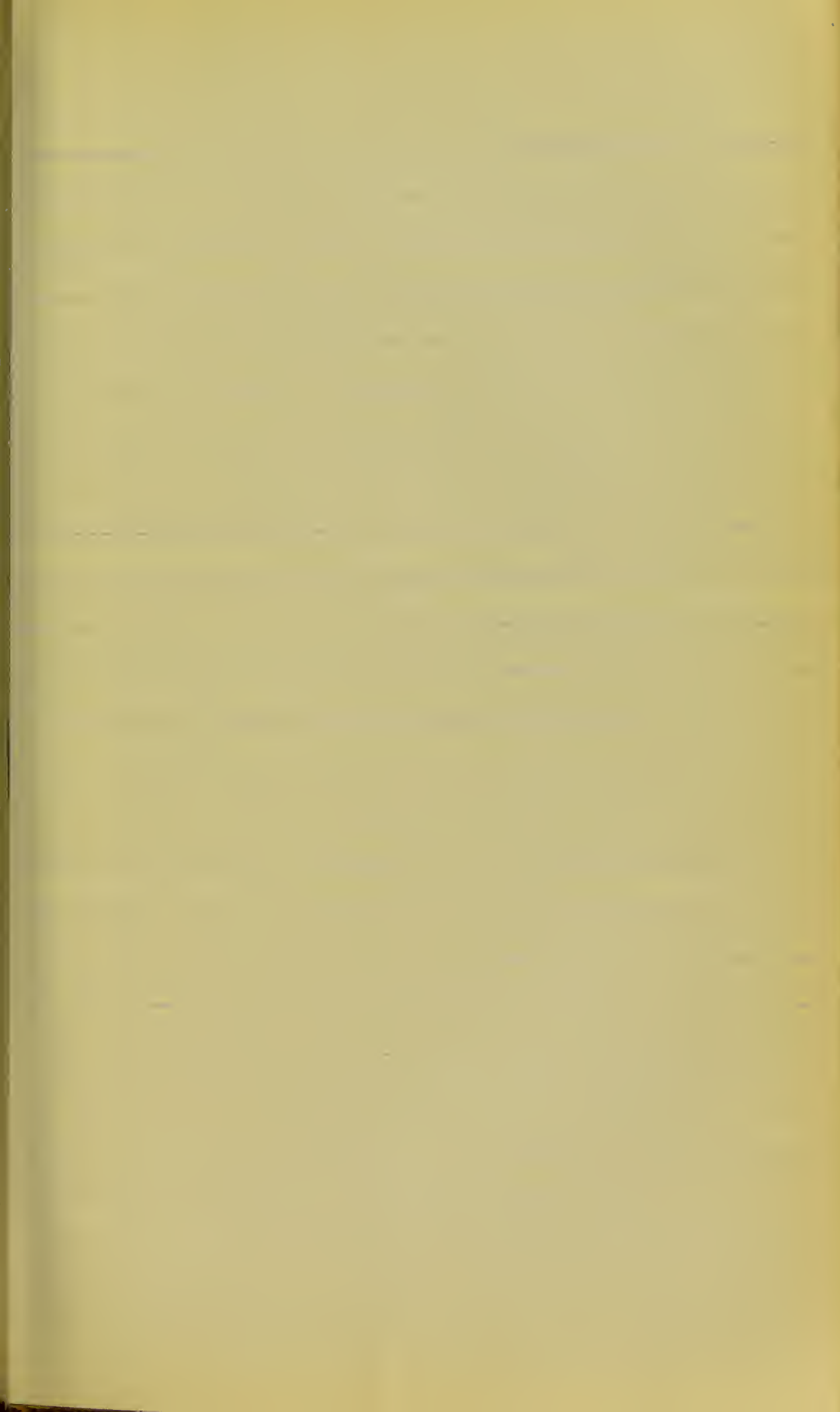


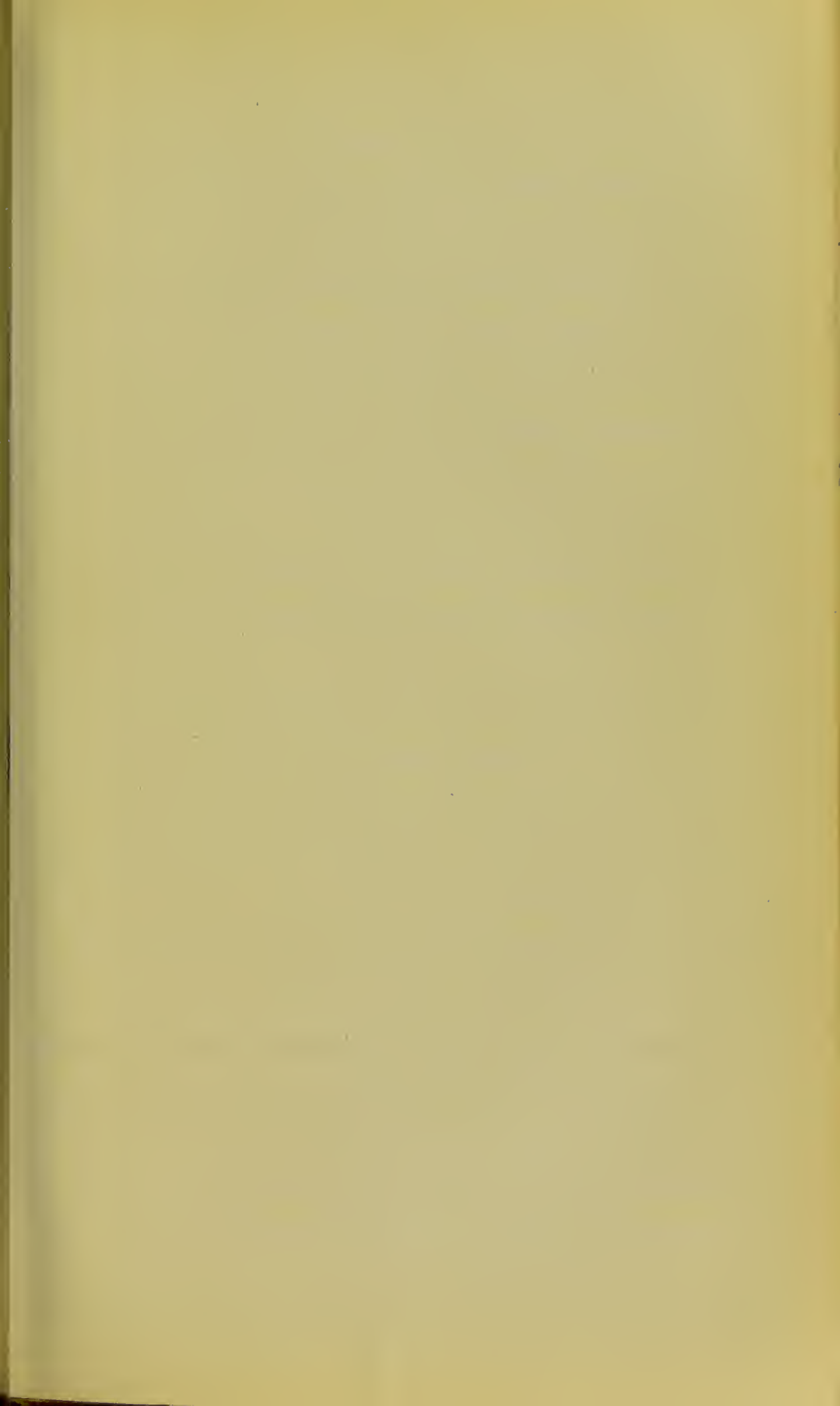


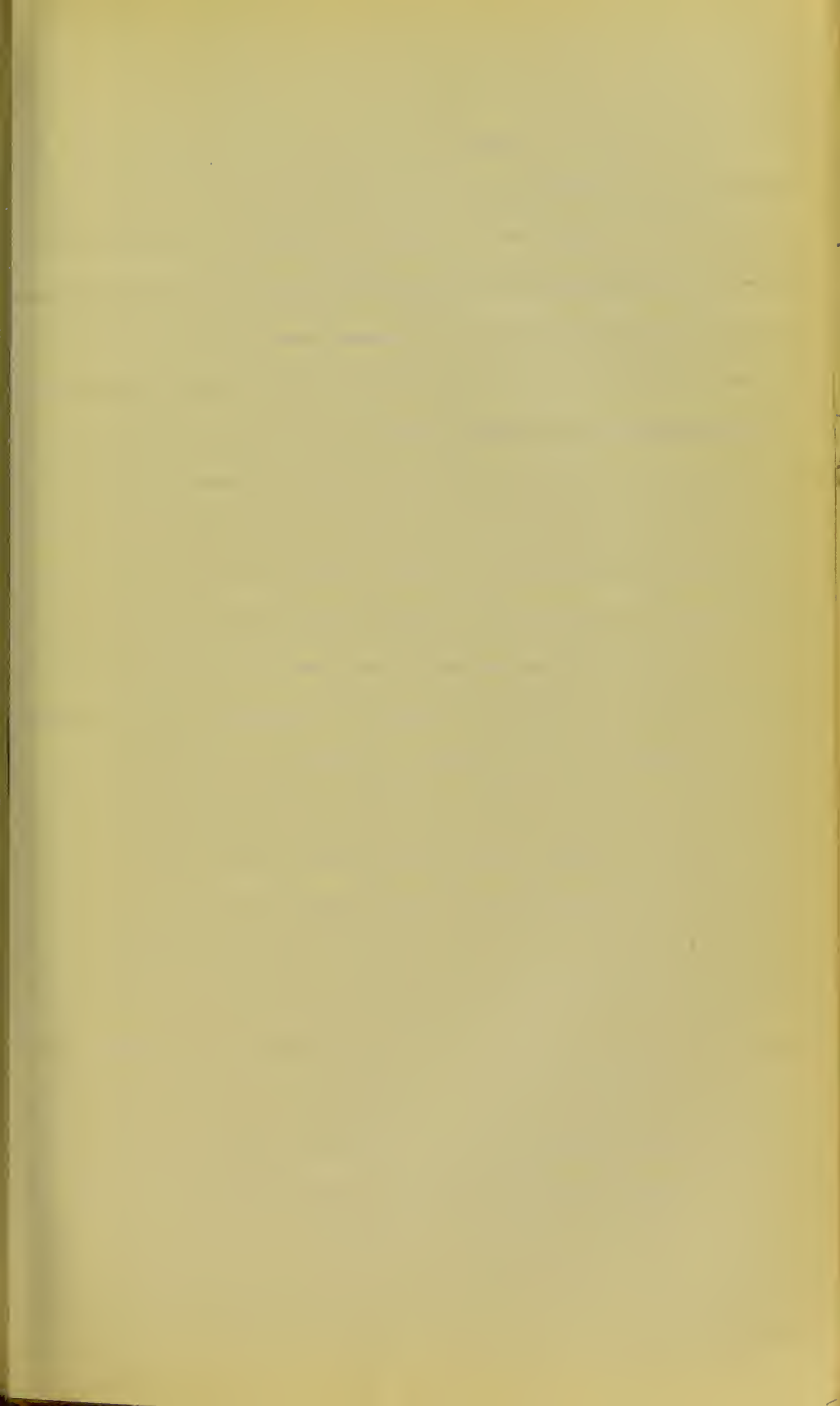


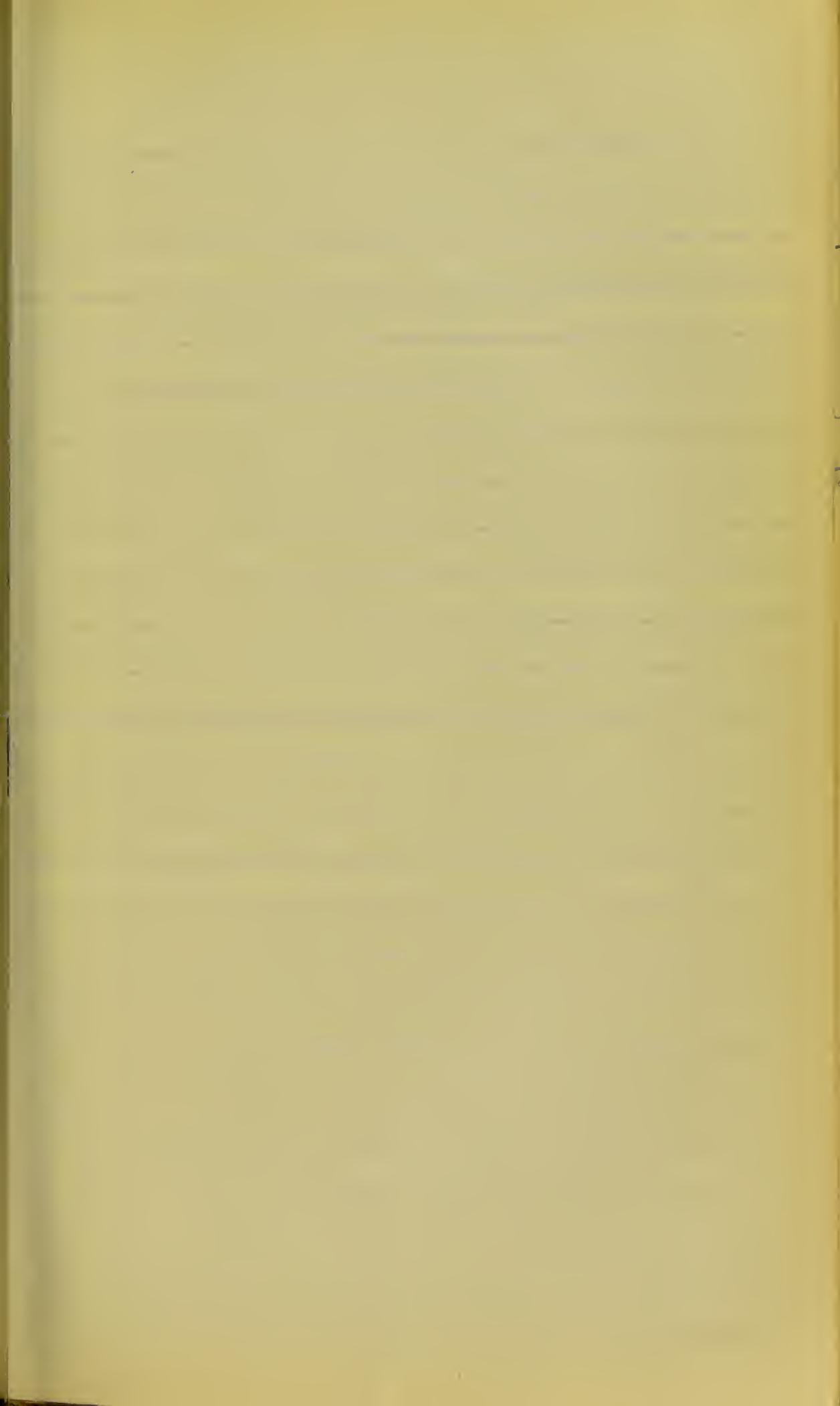












PELVIC INFLAMMATION.

I. OF PERITONEUM—Pelvic Peritonitis. *Perimetritis*

Synonyms.

or 1st degree-peritonitis

1. Seat,
2. Stages and Results,
3. Complications.

II. OF CELLULAR TISSUE—Pelvic Cellulitis. *Parametritis*

Synonyms. *or pelvic abscess*

1. Seat, *broad lig - Iliac fossa, any connective*
2. Stages and Results,
3. Complications. *general peritonitis - Abscess - sinus.*

ETIOLOGY.

SYMPTOMS.

PHYSICAL DIAGNOSIS.

DIFFERENTIAL DIAGNOSIS. *bladder.*

PROGNOSIS.

TREATMENT.

PHLEBITIS.

LYMPHANGITIS, LYMPHADENITIS.

INFLAMMATION OF VULVA—VULVITIS.

ANATOMICAL SEATS, *1 Bartholin's glands; 2. Labia minora*

PATHOLOGICAL VARIETIES,

CAUSES,

SYMPTOMS AND DIAGNOSIS, *Common in children. Test with*

TREATMENT. *astringent lotion $ZnO - CuSO_4$.*

INFLAMMATION OF VAGINA—COLPITIS.

VARIETIES, *Acute - Chronic.*

CAUSES, *Chill, Catarrh, Trauma, old pessary, Hæmorrhoids*

COURSE AND TERMINATION,

SYMPTOMS, *Itch & burning. Freq. pain at mict.*

DIAGNOSIS,

TREATMENT.

Causes

1. Labour
2. Manual. Coitus. Use of speculum.
Bathing - etc during menses
3. Spread of Inflammations -
4. Gonorrhoea. Metrorrhagia -
5. Tubercular - Cancer ^{of organs} ~~of~~ Periton
6. Traumatism - sexual excess -
instrument - injury during labo
7. Cysts bursting -

across glands. 3. Scrotal um - 4. External surface

4. There is itching.

Cosmetic treatment: Tar. Petroleum.

In severe cases Ag No 3, a severe
dissection of affected part some including
clitoris.

as, Gonorrhoea,

Gonorrhoea.

INFLAMMATION OF THE UTERUS—METRITIS.

PERIMETRITIS.

MESOMETRITIS OR PARENCHYMATOUS METRITIS :

Pathological and Clinical Varieties.

ENDOMETRITIS : *Subserine 2. Cervical.*

acute or chronic — Seats—greater frequency of Endocervicitis, *if parae*

Pathological Varieties, *Cancer 2. Displacement*

Clinical Varieties of Catarrhal form, *34 Excoriation*

Results. *Cysts - Degeneration - Gravidity - Sterility*

Etiology, *lyph. - Puerperium - Menstruation - 2. 1st*

Diagnosis, *Leucorrhoea - Menorrhagia - Sterility - Pain -*

Prognosis,

Treatment. *Treat causes - Symptoms - Light diet*

INFLAMMATION OF THE OVARY—OOPHORITIS.

PATHOLOGICAL AND CLINICAL VARIETIES, *Parenchymatous +*

CONSEQUENCES, *Hyperthrophied or atrophied ovary.*

ETIOLOGY, *Menstr. Chills - Puerperium*

SYMPTOMS, *Pyrexia - Seat of pain over ovary - egg on*

PHYSICAL DIAGNOSIS, *by exam.*

TREATMENT.

INFLAMMATION OF FALLOPIAN TUBES—SALPINGITIS.

SEATS, *Perisperm. Endometrium.*

PATHOLOGICAL VARIETIES OF ENDO-SALPINGITIS,

ETIOLOGY,

CONSEQUENCES, *Hydro-salpinx. P. o. salpinx. Peritonitis.*

SYMPTOMS AND DIAGNOSIS, *Depression of Menstrual periods*

TREATMENT. *Rest. Counter-irritation - Hot douches*

*+ Cotton wool + Iodoform -
Ergon may be removed.*

2) Hygienic life - topical -
hot douches & irrigations -
usually - speculum & colle. If granulation
or Ag. M₃ or Carbolic Acid. Iodine Uterine
Ex. In. & Ex. S₄. When uterine dilatation
& then cauterize & wash out with
an antiseptic solution. Then
Iodide of Phenol then applied -
then plug uterus & iodoform gaze
remove plug in 48 hrs. & rest
menses normal one year, KBr, KI.

menses normal one year, KBr, KI.

back & tender tubes may be palpation

CYSTITIS.

VARIETIES,

CAUSES, *Calculus. Chills. Morbid urine*

SYMPTOMS AND DIAGNOSIS,

PROGNOSIS,

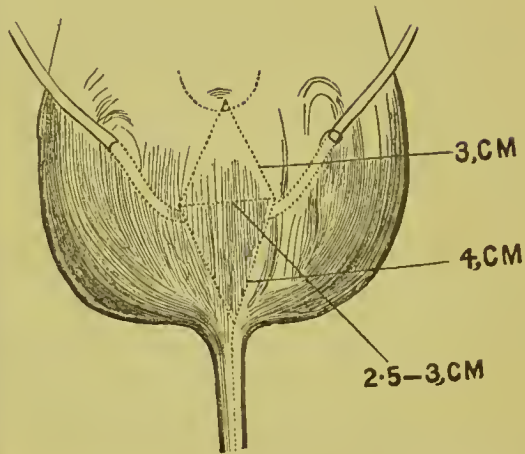
TREATMENT.

URETHRITIS.

VARIETIES,

SYMPTOMS AND DIAGNOSIS,

TREATMENT.



eat, & neighborhood.

DISPLACEMENTS OF PELVIC ORGANS.

1. OVARY—

Prolapse of : Symptoms,

Diagnosis,

Treatment.

Hernia.

2. FALLOPIAN TUBE—a complication of dislocation of other Organs.

3. UTERUS—

Upward displacement,

Downward „ = Prolapsus Uteri.

prolapse of Ovary

~~Descent of ovary~~

May fall as low as the bottom of the Pouch of Douglas - may be due to broad lig lying way -

Adhesions may change its place -

May follow uterus & tubes in displacement.

Symptoms distress - at menstrual menstrual periods dysmenorrhoea

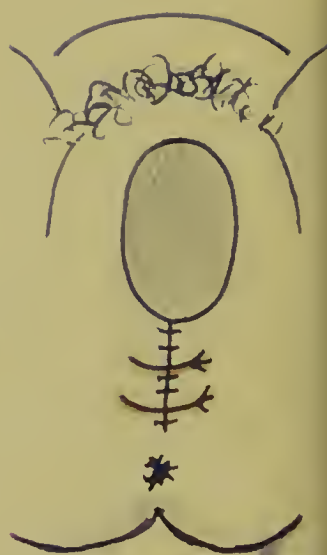
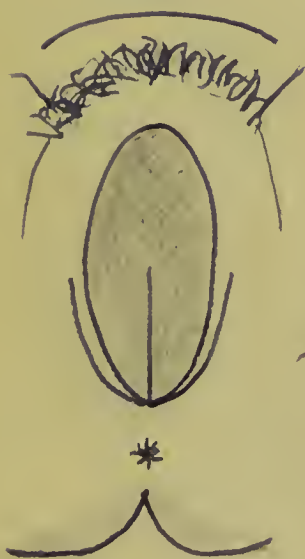
Diagnosis P.V. it can be felt. (Post) also by bimanual -

Treat Palliative -

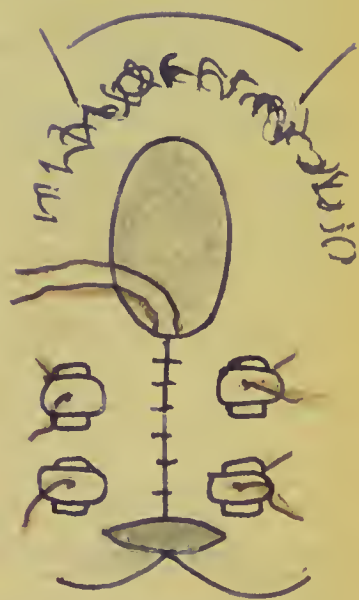
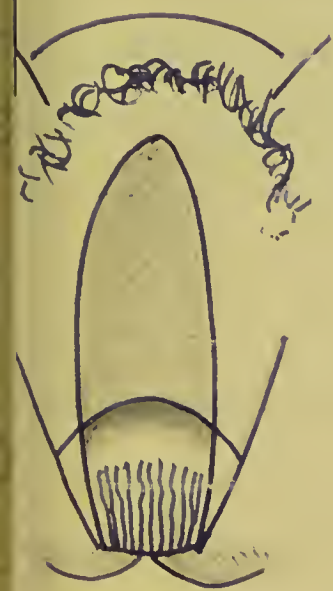
Pessory - Packing with wool soaked in glycerine -

Hernial sacs the ovaries have been found displaced -

17 out of 23 congenital - or may be acquired -



Displacements of Uterus



PROLAPSUS UTERI.

CAUSES : (1) Increase of weight,
(2) Loss of support,
(3) Increased intra-abdominal pressure.

DEGREES : complete and incomplete.

SYMPTOMS.

DIAGNOSIS.

PROGNOSIS.

TREATMENT : reduction ; *Packing*
retention—operative measures.

by pessaries
Episiophony
Perineorophy
Colporophy
IV Andrew -
Adams operation
of shortening lig
(vinn)

Causes of Uterine Displacements

- Enlargement of Uterus itself.
 - (a.) Pregnancy
 - (b.) Puerperium
- Hypertrophy - metritis - neoplasm

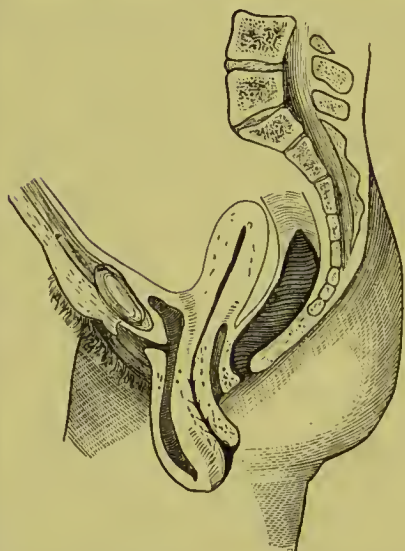
Distension of Neighbouring organs -

- (a) Bladder - undue + persistent -
- (b) Rectum - in a less degree -

Increase of Supra-pelvic pressure

- (a) Relaxation of abdominal walls + tonicity lost. The retentive power of the walls being lost.
- (b) Tumours in abdominal cavity
- (c) Fluid accumulation in Peritoneum
- (d) Improper dress - Tight waist - too much weight on waist -
- (e) Woman making too powerful muscular efforts.

The process of descent is a gradual one. Women of working classes are commonly affected in this way - & especially after confinement getting up too soon after wards



Symptoms.

do work. The uterus being still subinvolved. The displacement is usually complicated with some morbid changes in the structures displaced.

1. Hypertrophy of body -
2. Congestive Metritis
3. Cervix also hypertrophied + thus often canal is more than double its ordinary length -
4. Catarrh of Cervix
5. Vagina catarrhal walls covered with moisture - Puzae lost + m m eventually looks like epidermis.

Bladder - distorted + displaced - imperfect evacuation + so cystitis + often concretions.

Rectum - distorted + undue lodgement of faecal matter - Prolapsus recti may complicate Prolapsus uteri

Pelvic peritoneum - pelvic peritonitis may occur -

Menorrhagia - pseudometritis
Leucorrhoea f. vag walls



Woman is generally sterile -

Conception may occur difficult labour
Constipation + frequent desire
for micturition.

Difficulty in walking or working
with a mass between her thighs -

Diagnosis by examination.

Easily recognised by inspection.

Mass size of fist, pink,
hanging from vulva - smooth
surface except some erosive
patches. Lower ant: aspect
is the external os -

When grasped between fingers
& thumb outline of entire uterus
can ~~can~~ sometimes be felt
to be external - in other
cases one only feels the
cervix. Then make bimanual
examination - Pass sound
to differentiate from fissure
in fibroid tumour. This
also gives length of cavity
& condition of walls -
Also pass sound into
bladder - Finger in rectum.



some cases the prolapse disappears on lying down -

Prognosis

When long standing has no natural tendency to recover -

Pregnancy - If abortion be ~~wanted~~ wanted η for first three months the prolapse will disappear - + with good management partial cure may be secured - But generally it recurs in a more exaggerated degree - Menopause - The senile atrophy gives relief to some of the menorrhagic symptoms - Uterus may thus obtain some relief.

When a patient has worn pessaries for a long time, at the menopause, ulceration + infiltration of malignant neoplasms may take place in the region of the long continued pressure -



Treatment

Preventative - or Prophylactic -

Repair torn perinaeum -

Keep patient in good condition
in 3rd stage of labour -

Do not allow her up for 10 days
after labour -

Replace structures in reverse
order in which they prolapsed

1st Post Vag Wall

2nd Cervix

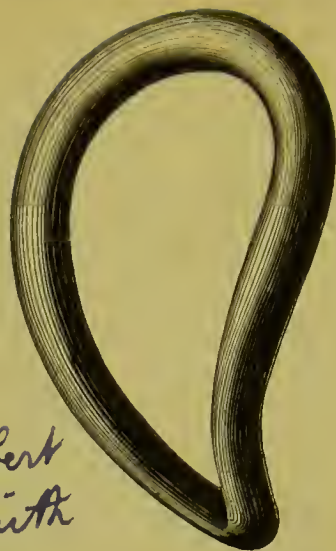
3rd ant Vag Wall.

Patient may need rest &
~~para~~ preparatory treatment
before actual treatment -

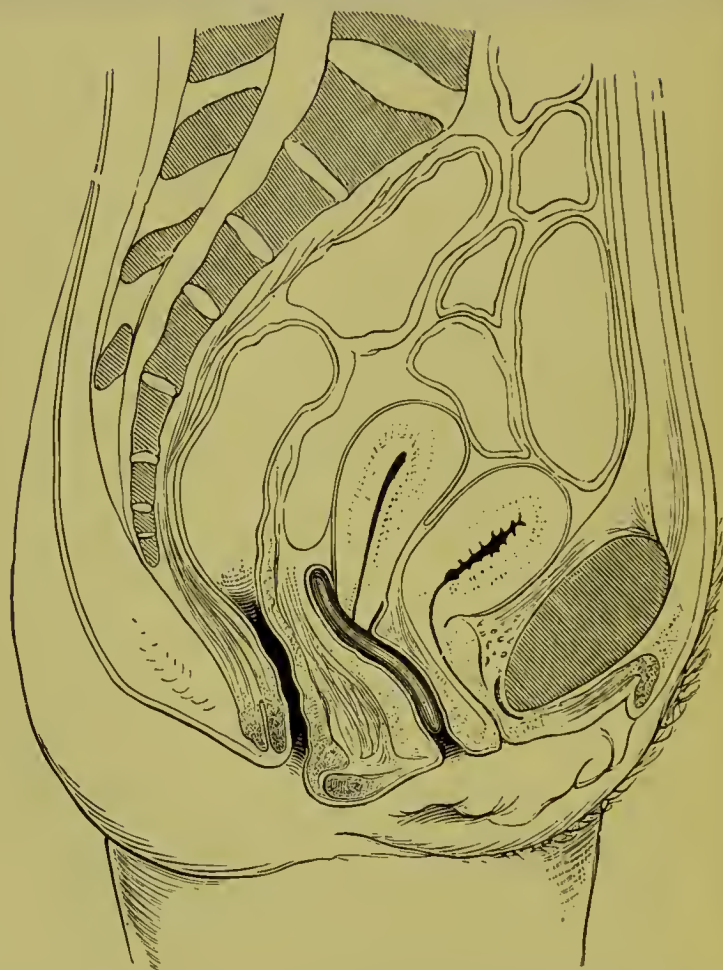
Congestion & other symptoms
being first got rid of.

Massage has lately been much
practiced in France & Germany.

Packing the Vagina with
Tampon - renewed every week
Pessaries - Made of different
metals, or wood, ivory, bone etc



Albert
Smith
Pess.



all these are now superseded
by indiarubber (soft) or
vulcanite (hard).

However the indiarubber ones
lose their elasticity after long
use -

The Vulcanite ones can be worn
for a long time - They can
be modified in form by
dipping them in boiling
water - But one should have
many different shapes &
sizes to choose from -

Gutta-percha may be used, it
is very 'mouldable' when warmed.
Celluloid has lately been much
used - It is also easily moulded.

Different Forms of Pessaries

Ball Pessary made of rubber,
wood, or vulcanite - The latter
is the best - very serviceable
in elderly women where there
is atony -

Ring Pessary ◎
or Ring with diaphragm

Saucer Pessary



all these ring pessaries should rest ~~on the~~ above the plane of the levator ani -

Disc & stem Pessary



boxwood, metal, gutta-percha; top may be circular or ovoid or may have notch in it.

Patient can learn to introduce it herself. She should remove it every third night & wash out the vagina.

Bivalve ~~B.~~ (Zwang)



Made of vulcanite - These are always going wrong - the screw breaks etc.

All pessaries must be removed from time to time -

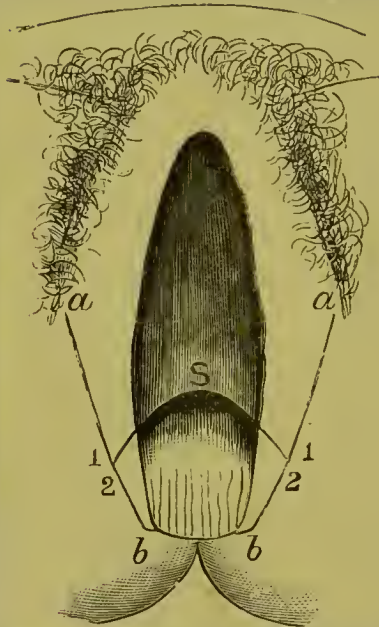
If worn for a long time when the menopause occurs ulceration ~~may~~ will be set up & the pessary may even ulcerate their way through the vaginal wall.

os: ut:



urethra

Colporophy -



Episporophy -
+ Perinerorophy

Operation (if pessary + packing are no good)
Close the Pudendal aperture
+ so narrow it
Close + narrow the vagina
Modify size of Uterus
Shorten Uterine ligaments

Episiorophy

Where perineum is repaired = Perinerorophy
Often you ~~do~~ have to combine
episiorophy with perinerorophy -

Split off the vulval + ^{vaginal} ~~pudendal~~
m m + then go on -

Colporophy

Shortening round lig: Alexander

Adams operation -

(b) Fixing Uterus to Abdominal
wall -

RETROVERSION AND RETROFLEXION.

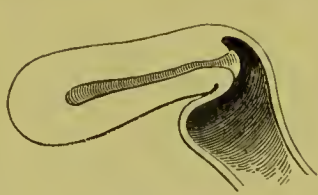
PATHOLOGY,

CAUSES, *1. Congenital - Loss of, or too much flexibility, etc -*
SYMPTOMS, *2. Men: 3. Dys: 4. Len: 5. Dysparunia: 6. Ster: 7. Constipation -*
Reflex

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS.

CONSEQUENCES AND COMPLICATIONS,

TREATMENT. *by 1. Posturing - 2. Manipulating 3. Sound
 4 operation Adams - Ventral or Vaginal fixation
 afterwards keep in position
 to pessary -*



Retroversion



Retroflexion

Displacements in position

1. Retro-position - commonest.
2. Antro-position
3. RT or Left Latero-position

Displacements of Fundus

Retroversion = position displaced
Retroflexion = body bent back -
so then looks towards pubis
symphysis

causes

1. Congenital
2. Tendency in some families -
3. Loss of flexibility as in
 - i. Chronic Metritis
 - ii Tumour in walls
 - iii Subinvolution
4. Too much flexibility
 - i atrophy at the bend or kink.
 - ii. Changes in ligaments - loss of tone of (a) Utero sacral ligaments +
so cervix carried too far forwards.

Differ : Diag

1. Loaded Rectum
 2. Deposit in Pouch of Douglas
 - (A) Peritonitis
 - (B) Haematocele
 - (C) Cancer
 3. Cellulitis behind uterus
 4. Myoma of Post uterine wall
 5. Prolapsed ovary
 6. Sm. ovarian tumour
 7. Tubal swelling in pouch of Douglas
- Symptoms

(b). round ligaments relaxed.

(c) broad lig & floor of pelvis relaxed

(d) Utero ^{vesical} ~~sacral~~ lig. shortened

Strain, fall or jar to patient.

Habitual distention of bladder

Peritaitic adhesions

conditions complicated this are

1. Tumours

2. Tendency to inflammatory change in uterus.

In this condition Menorrhagia is generally a leading symptom. Dysmenorrhoea may be the leading symptom.

Leucorrhoea may be present

Dysparmia due to inflammation.

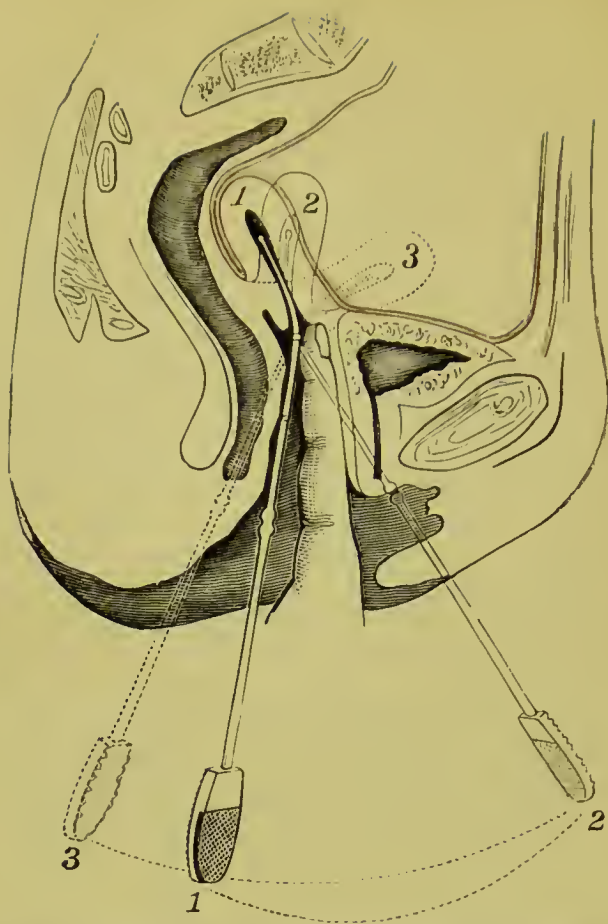
Sterility in oparae or xparae -

Constipation with obstruction -

Reflex neuralgic distress, gastric or mammary symptoms -

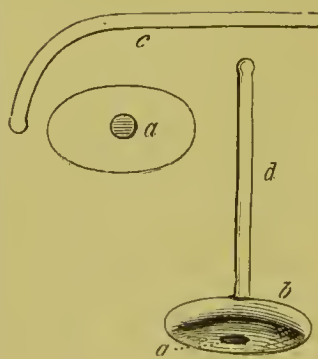
Diagnosis by p v inspection & bimanual -

Sound - May have to use chloroform.



Treatment by Sound for
retroversion + retroflexion

Albert Smith's
Modification
of Hodges' is the
best pessary
to use.



Disc + stem
pessary

prognosis as regards life is favourable.

Treat

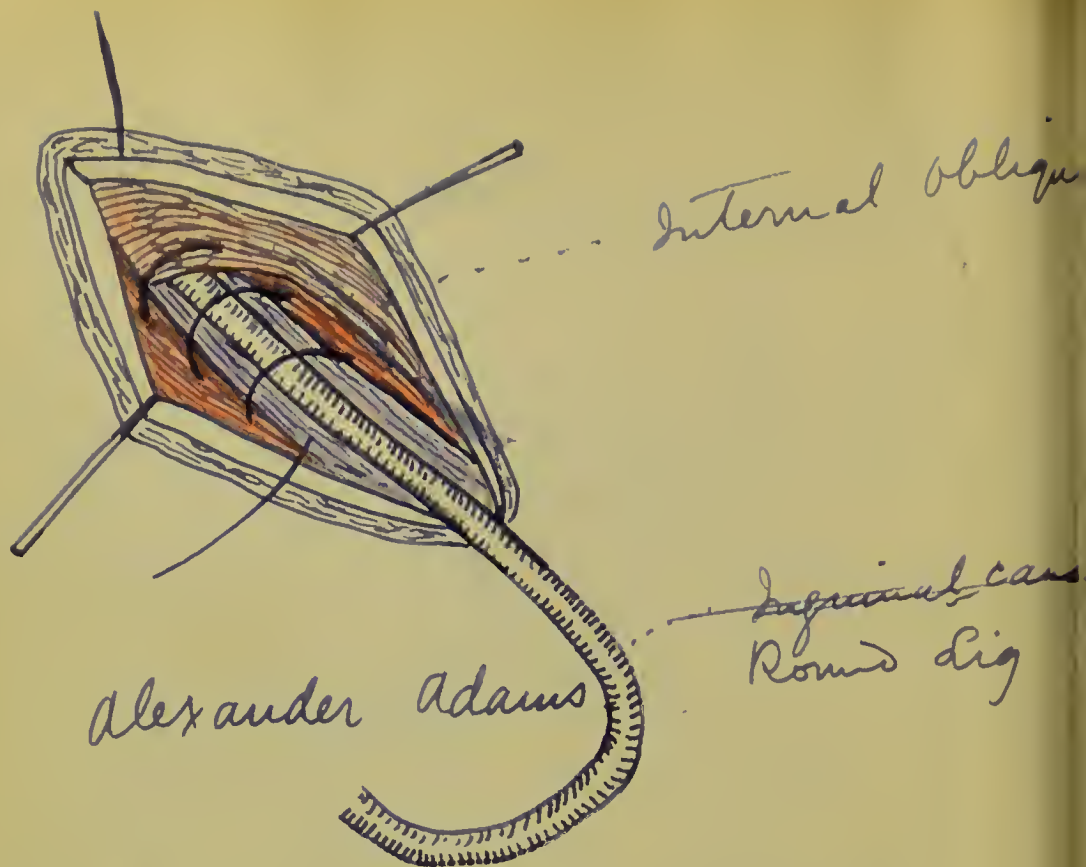
Treat the complications (such as inflammation).
The condition may cure itself by the converse of any of the causes -
But the uterus must be kept straight -

1. By posturing the Patient
Knee elbow position - Then pull back perinaeum & allow vagina to balloon -
Lay hold of cervix with vulsella & pull down -

By bimanual manipulation under chloroform - Left hand working through abdominal wall - Or it can be done without chloroform

By introducing a sound -
see diagram

To keep it in its place -
~~Use~~ Use a pessary



Shortening of round ligaments

Incision 5-6 cm length from internal
inguinal ring to spine of pubis - down to
apponurosis of ext. obl.

A Hodge pessary is the thing -
Albert Smith's modification is
better - in fact the best of all -

If these do no good a stem pessary
may be necessary & keep it its
place by a ring pessary or
by packing vagina with codspon-
ge

Operative measures

- i Alex: Adams (shortening round lig.)
- ii Yento fixation fix fundus to abdom: wall.
- iii Vaginal fixation. remove ant. lip of cervix
adjacent bit of vaginal wall & allow to cicatrize.

Alex: Adams Operation

Shortening of round ligaments
first discovered by Alquié

In 1881 Alexander of Liverpool
& Adams of Glasgow first
performed these operations -

Difficulties

i. finding the round lig -

- ii. Hernia apt to follow.
- iii. Tender cicatrix left.

ANTEVERSION AND ANTEFLEXION.

PATHOLOGY,

CAUSES, *Congenital - Acquired*

COMPLICATIONS,

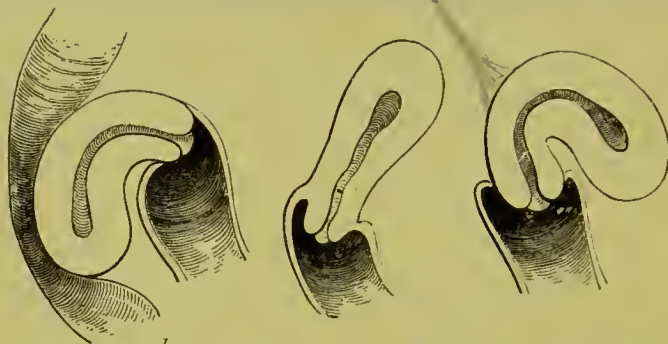
SYMPTOMS, *Sterility - Dysmen - Men. Gen. Dyspar.*

DIAGNOSIS,

TREATMENT. *Pessaries - Operations*
(not good)

*Tense utero
sacral lig. -*

1. *Marion Syme*
2. *Sir J Simpson*
3. *Dilating + curetting*
(best)



Retro-flexion Normal Anteversion

Anteversion & Antelexion

In chronic metritis the uterus is anteverted - This condition is ceasing to be considered a uterine displacement at all.

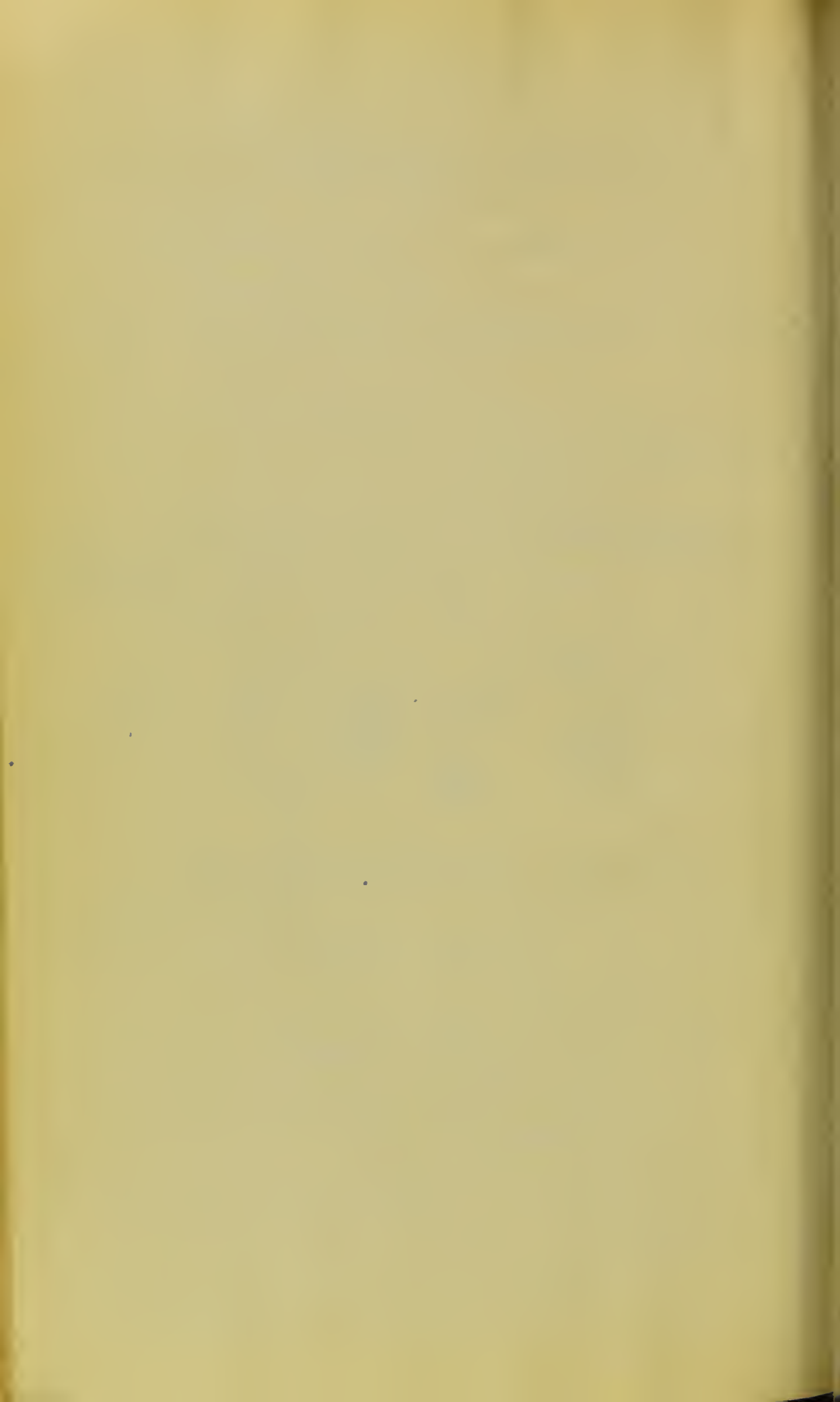
Antelexion

Congenital - Physiologically the uterus is not erect until puberty. If this does not occur after 18 menstruation we call it a congenital antelexion - pinhole or -
Acquired

Patient comes complaining of dysmenorrhoea or sterility - The pain is during the flow & not pre-menstrual -

The menstrual flow may be scanty - or you may have menorrhagia + leucorrhoea -

Dysparunia is often a common symptom -



Treatment

1. Pessaries -

1. Stern pessaries must be used with very great caution - They may set up inflammations or perforate - Vaginal Pessaries are not any good at all in this condition.

Operations

1. Marion Syme Opened into post cervix + cicatrization.
2. Sir James ~~Syme~~ Simpson modification of above
3. Best results got by dilatation of stenosed canal by Hagar's dilators and then curetting -

NEOPLASMS OF PELVIC ORGANS.

NEOPLASMS OF OVARY.

*Fibroid
carcinoma or Sarcoma*

I. Solid Tumours.

Simple and malignant.

II. Cystic Tumours.

1. Hydrops folliculorum. *pea to hen's egg-*
2. Dermoid Cysts. *(teratoid)*
3. Cystoma.

Pathological Anatomy.

Contents and their chemical composition.

Mode of development.

Etiology.

Symptoms.

Physical Diagnosis.

(a) When in Pelvis.

(b) When Abdominal.

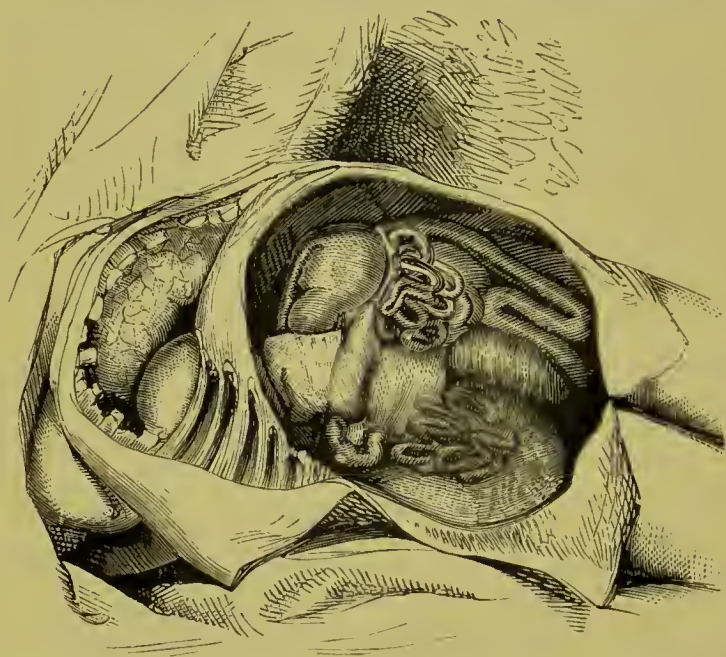
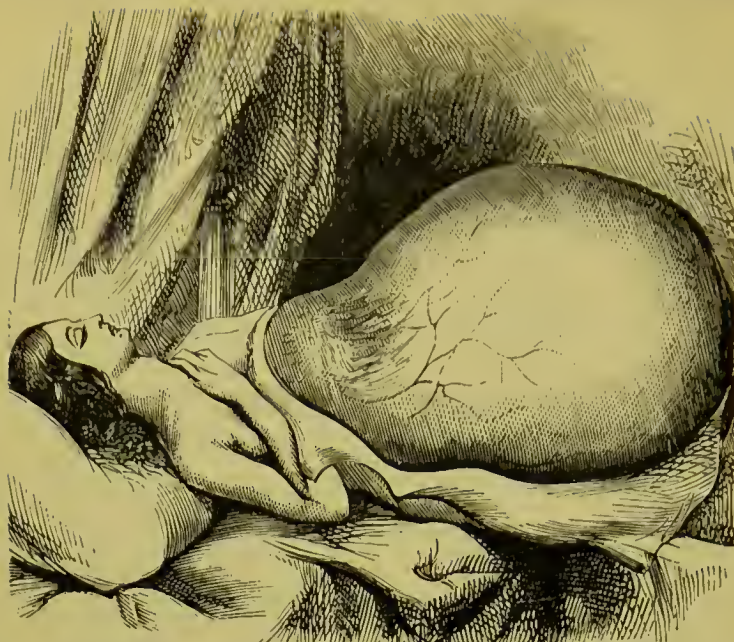
Neoplasms.

ovary. Simple = Fibroid
ovarian tissue disappears + only
fibrous tissue left. May be myomatous.
The whole organ is fibrous. Vary
from size of fist to size of adult
head. Symptoms are mechanical.
Diagnosis Solid ~~ovary~~ tumour in
pelvis ~~not~~ joined to uterus ~~to~~
by pedicle - Found all ages.

Solid Malignant Carcinomata or
Sarcomata - Rapid growth -
Cancers usually are bilateral
both ovaries being affected and may
be hard or soft - Peritoneum also
becomes affected

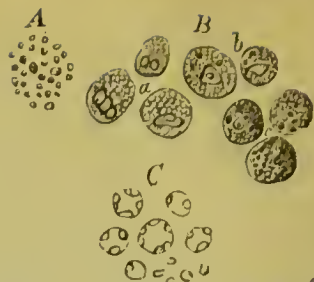
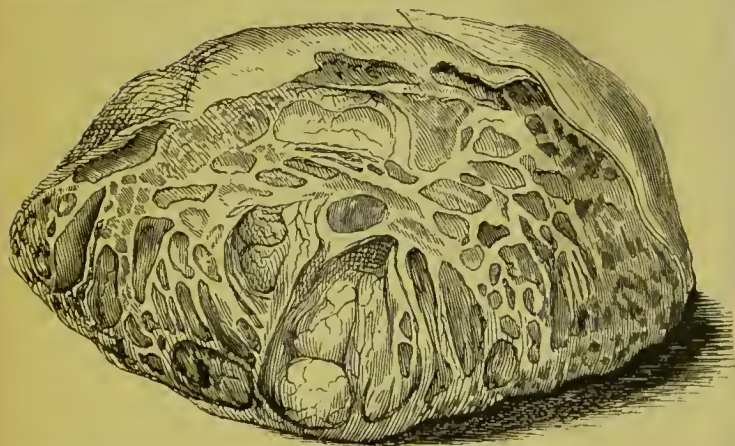
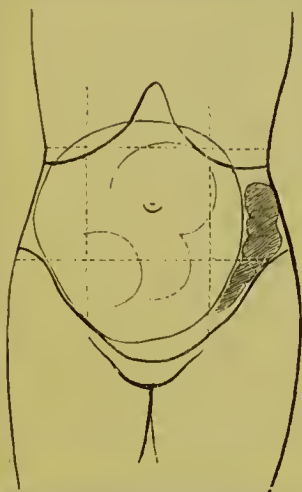
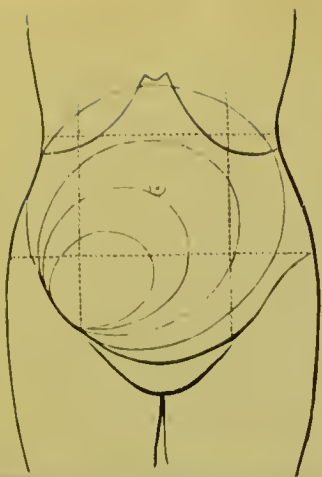
Cystic Ovarian

1. Hydrops folliculorum, one or more
follicles has undergone distention -
small cysts size of pea or hen's
egg - Simple distentions of graffian
follicle that have never burst -
2. Dermoid Cyst or Steatoid Cyst
affects one ovary - Only one cyst.



contains thick fatty material - When it cools it becomes more or less solid -
Fig 1 1. Inclusion of foetal elements -
The dermoid is often of very early life -
Portions of skin, hair, bulbs + glands, m m, mucous glands, bones, ~~the~~ teeth may all be found in the fatty material - Size varies from small walnut to 7th month pregnancy -

3. Cystoma will grow to ~~to~~ an enormous size - Nearly all multilocular - Wall lined with epithelial cells like the ordinary graffian follicle - Contents vary in consistence, colour, chem charact, ovula have be found in some of the smaller cysts). Mode of origin is that graffian follicles which are undeveloped undergoing degeneration may grow by glandular proliferation or by stroma projecting.
Symptoms When large - Menstruation interfered with. Reproductive powers diminished. Mechanical symptoms by mere pressure - Diagnosis situation at back of uterus + broad ligament



Bennetts cells
found in ovarian
Cystoma
A. Broken down
B. altered cells
from wall of
sac
C. as above



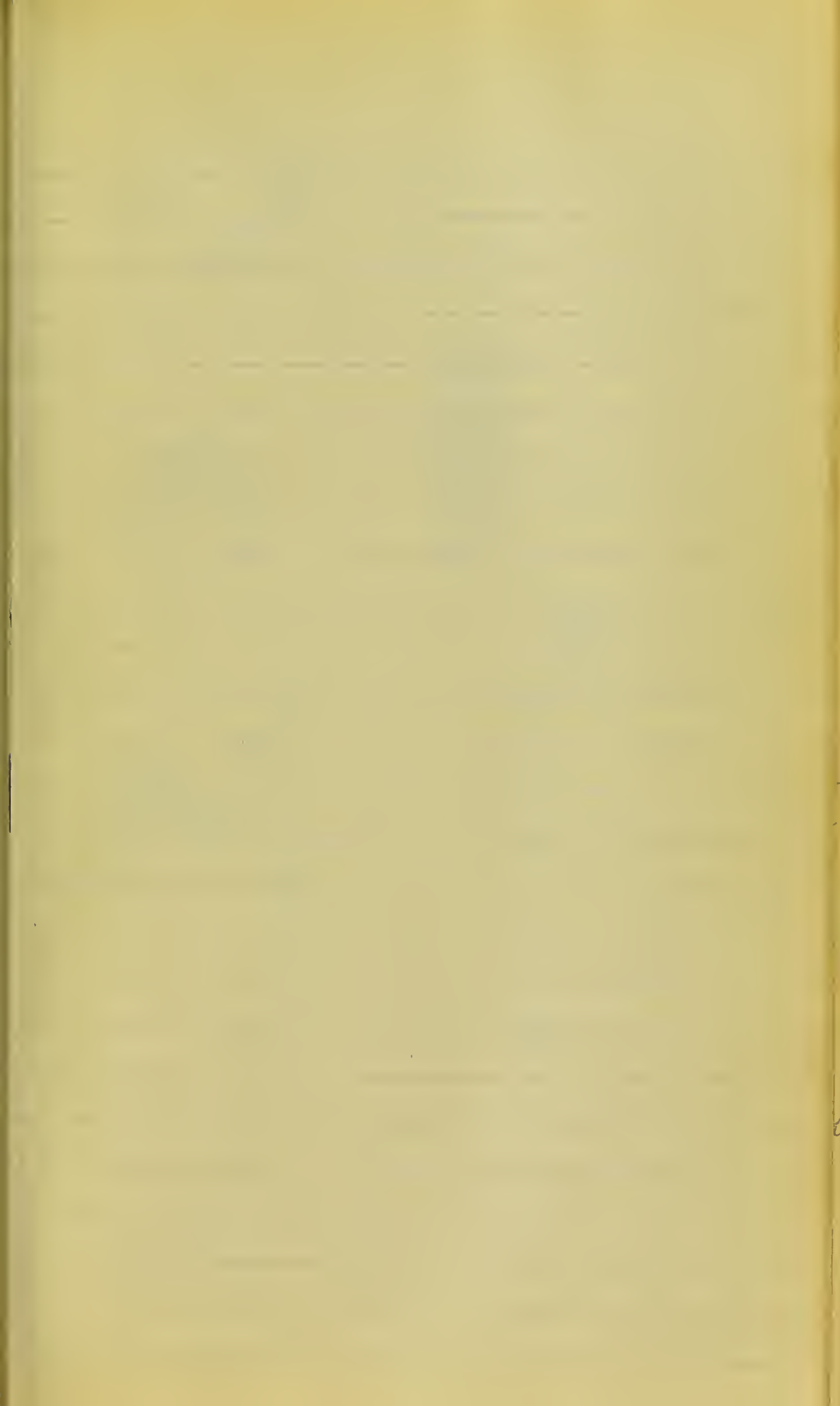
cystic in character - Mobile - Lay
 held of uterus with ~~val~~cella +
 pass sound. It will be found to
 be normal in size - When
 abdominal line of growth must be noticed.
 Not quite regular on its surface.
 Consistence cystic - May get fluctuation
 in large cyst.

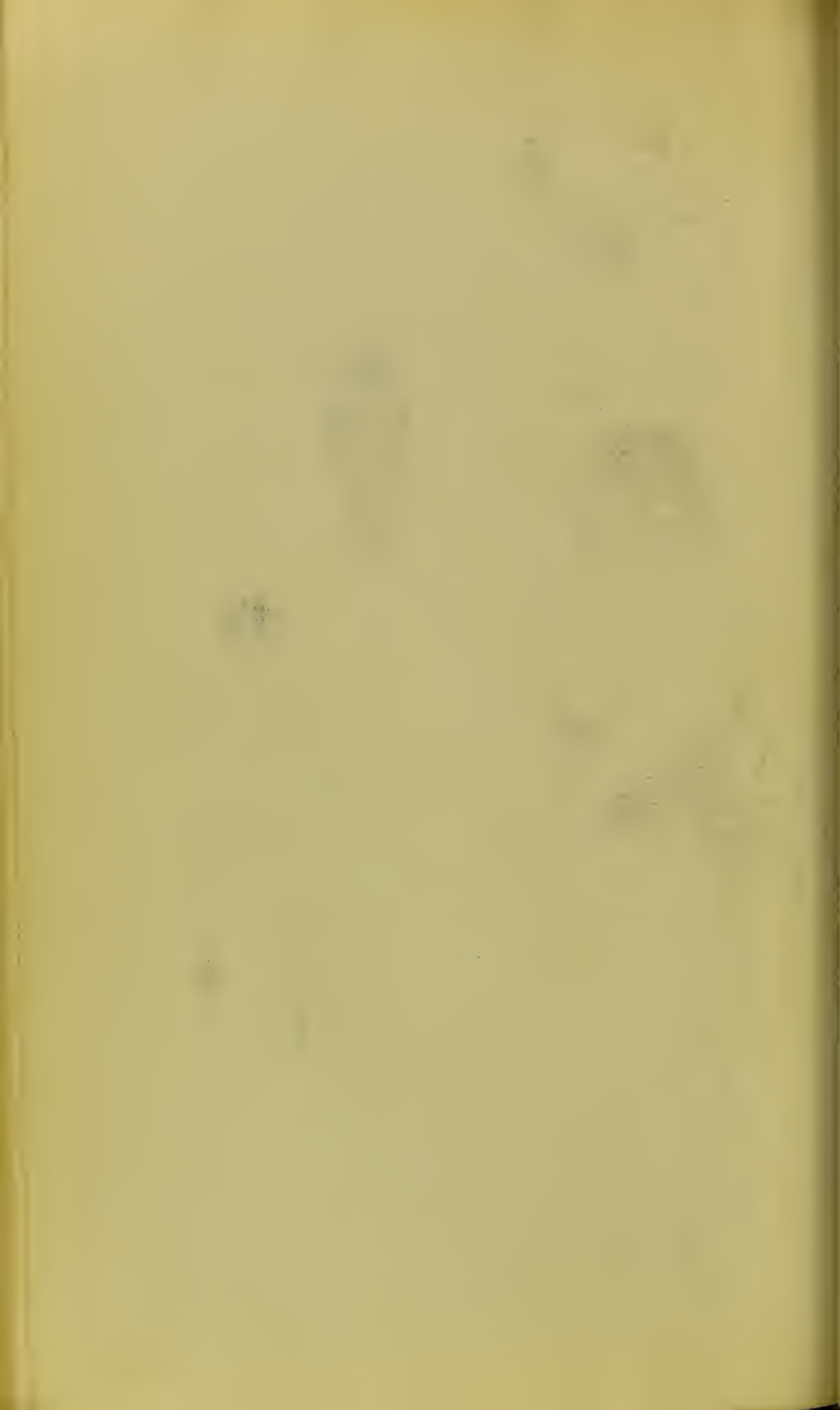


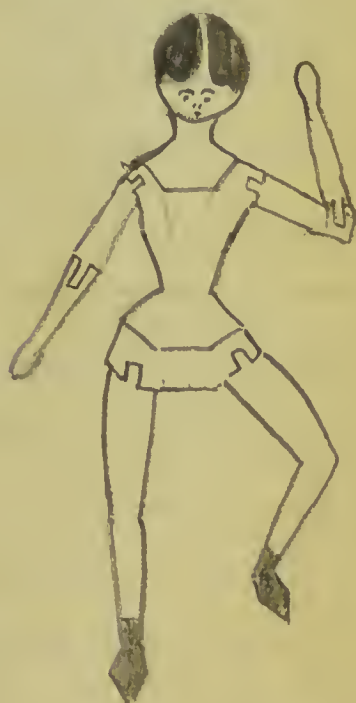
Differential Diagnosis from :

1. Retroverted Uterus. *by passing sound -*
2. Pregnant Uterus or extra-uterine gestation. *absence of bruit*
3. Fibroid Tumour of Uterus. *Palpation etc: } or heart sounds*
4. Hydro- and hæmato- metra. *P.V. sm in size*
5. Pseudo-cyesis. *give chloroform*
6. Parovarian and Fallopian-tube cysts. *always monolobular*
7. Ascites. *inspection. bulging flanks etc + slow growers*
8. Tumours of Omentum. *abdominal tumour + palpation -*
9. Hydronephrosis and floating kidney. *+ percussion*
10. Tumours of Liver.
11. Enlarged Spleen.
12. Faecal accumulations.
13. Distended Bladder.



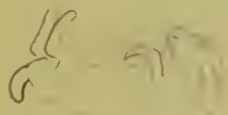
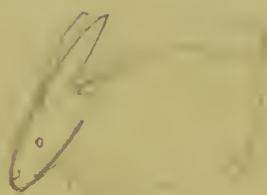


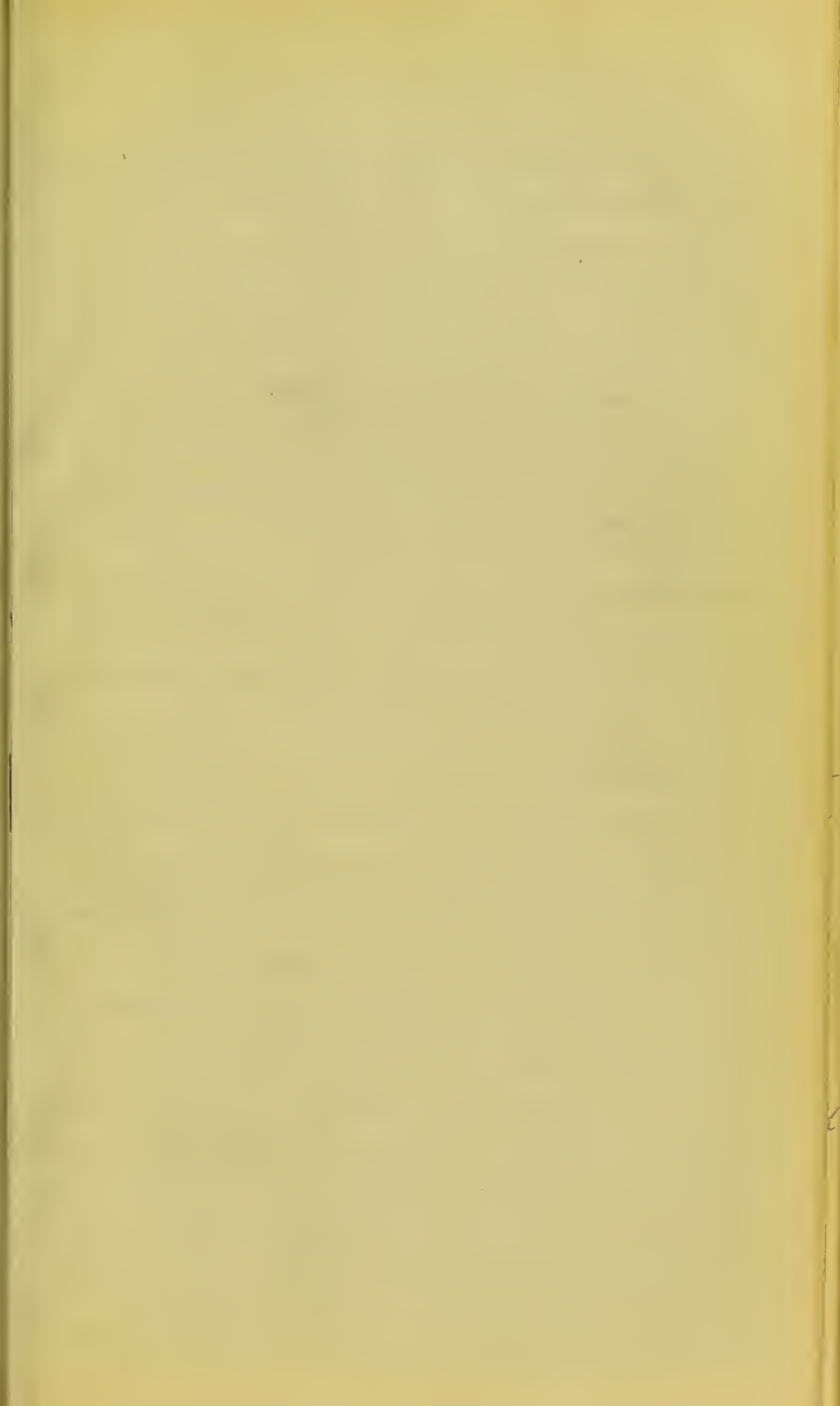














Prognosis of Cystic Ovarian

1. If the tumour burst the gelatinous contents spreads through the peritoneum & give rise to a Pseudo-myoema-peritonei - Unless relieved at once death occurs from general peritonitis.
2. Rupture may occur & patient die of haemorrhage
3. Spontaneous cure may take place in Pedicle torsion but this twisting is acc with danger - Happens most frequently in Dermoid. Cause of the twisting not known. A certain degree of torsion is extremely common - especially where the pelvic tumour becomes abdominal. In torsion complete the symptoms are those of ileus - Sickness, vomiting, & intense abdominal pain - Thus Patients life is in danger - Peritonitis being set up.
4. If a tumour is left alone ~~they~~ ^{it will} go on growing - & thus will interfere with circulation - Thrombosis & Oedema in lower limbs - Respiration embarrassed.

PROGNOSIS.

TREATMENT.

General medical treatment.

Operative measures.

1. Tapping of cyst.
2. Electrolysis.
3. Ovariectomy.

History of operation.

Contra-indications.

Mode of operating.

1. Preliminary measures.
2. Instruments required.
3. Position of patient.
4. The Operation.

(1.) The Incision.

(2.) Evacuation of one or more cysts.

(3.) Separation of Adhesions.

(4.) Extraction of Tumour.

(5.) Securing of Pedicle.

(6.) Cleansing the Peritoneum.

(7.) Closing the wound.

5. After-treatment.

Cases in which the cyst cannot be removed—incomplete operation.

+ Patient gradually sank + died -

Cause unknown -

Treatment

If other disease be present kidneys, heart + lungs you must not operate.

The tumour may be complicated @ pregnancy - Interfere by operation during pregnancy - The mortality is not high.

Keep up patients health + consider surgical interference

1. Tapping as palliative measure - may be followed by inflammation of cyst or even peritoneum + death may result - Patient lies with abdomen over edge of bed - You may puncture before performing ovariectomy -

Ovariectomy - first performed in 1809 by American Doctor - McDowal



an exploratory incision should first be made & finger introduced.
Contra-indications. Put Patient to bed for some days & give medicine to favor emunctories. Always operate as early as possible for the smaller the tumour the smaller the risk -

1. Incise just to allow one finger to enter & feel for adhesions etc -

2. Then enlarge the incision to introduce the whole hand -

3. Open Cyst & remove contents - taking care to let as little as poss 'reach' internals' -

4. Catching edge of cyst wall draw to wound & try & get it out -

5. adhesions may be divided by finger or if more attached ligatured & cut -

Now the pedicle must be ~~dealt~~ dealt with - Either with cautery and clamp -



~~and~~ or if that is impossible
in more cases it is better to
use silk ligature -

7. Peritoneal cavity must
be cleared out if mess:
may be even washed out
+ glass drainage tube -
This is often mess when the
tumour has not a pedicle
8. Close the wound securing it
in two layers - Catgut sutures -
Use needle in fixed handle -
one stitch through peritoneum,
muscles, + fascia and another
through skin bringing skin
surfaces together -

Keep patient at absolute rest
for a few days - only give
milk + water - she may want
stimulants - On 3-4th day
give aperient -
There may be collapse immediately
after the operation -
or may be peritonitis -
If we can get a motion with

saline aperient there is ~~not~~ no danger of peritonitis -

On third day give some food and gradually get her upon diet. Keep patient in bed for quite a fortnight - better 3 weeks. Before getting up fit an abdominal belt having a pad over the wound -

If we come upon a parovarian tumour we may deal with it in exactly the same way. They have thin walls & innocent contents.

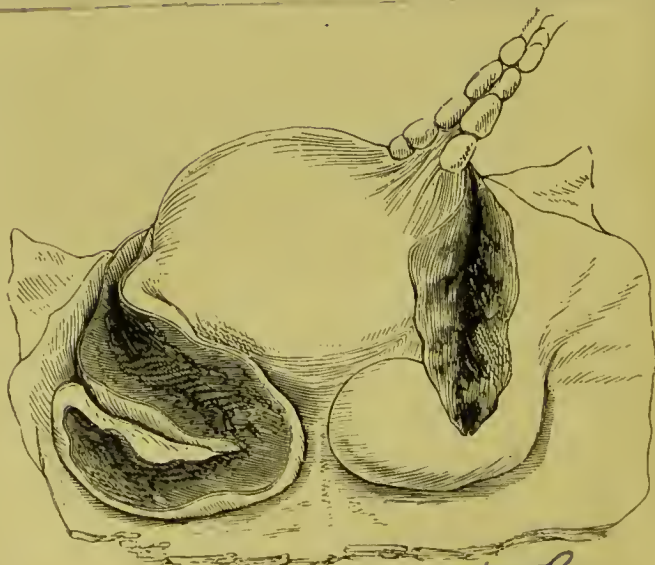
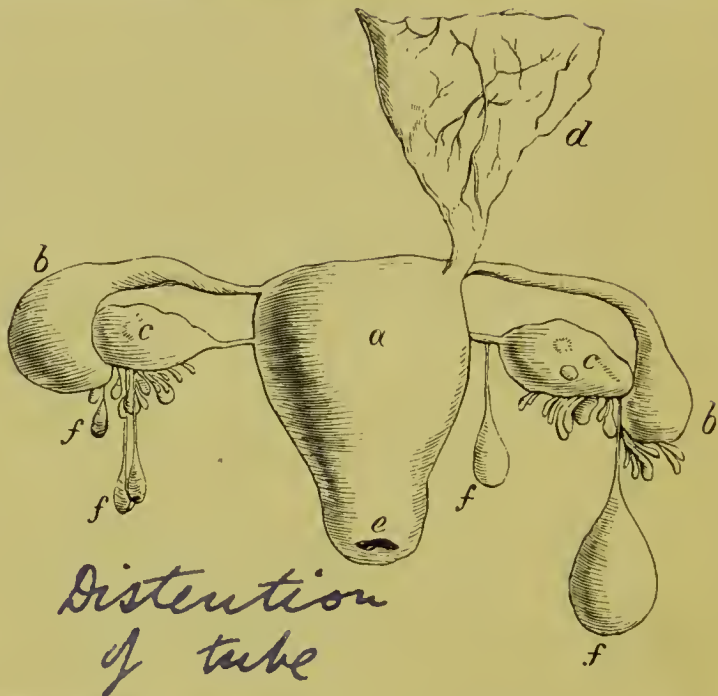
NEOPLASMS OF FALLOPIAN TUBES.

TUBERCULOSIS.

FIBROID TUMOUR.

CARCINOMA.

HYDRO- HAEMATO- and PYO-SALPINX.



Neoplasms of Fallopian Tubes

Tuberculosis seems to pick out the fallopian tubes whenever the genitals are affected -

Fibroid Tumour

usually c uterine fibroids



Fibroid of Fallopian tube
" " of uterus

NEOPLASMS OF UTERUS.

Myoma, Sarcoma, Carcinoma.

MYOMA OR FIBROID TUMOUR.

PATHOLOGY.

Structure, *Fibro-myoma*

Anatomical Seats, *Sub peritoneal - Intraligamentary, Submucous*

Degeneration.

ETIOLOGY,

SYMPTOMS,

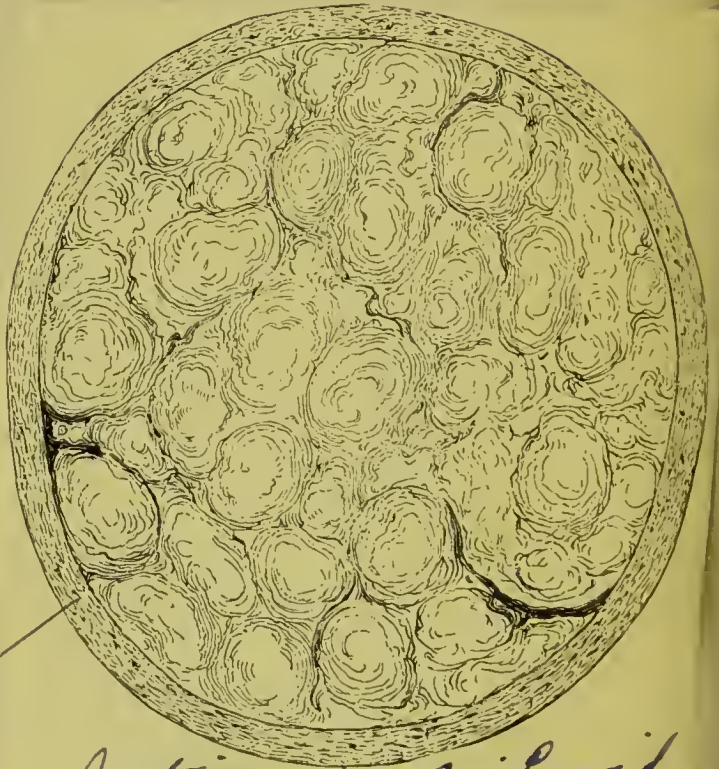
DIAGNOSIS (a) when pelvic, (b) when abdominal.

PROGNOSIS,

TREATMENT (a) medical, (b) surgical.



*single nodule of
fibroid in section*



Section of Fibroid

*Loose connective tissue: between capsule & tumour
with some strong fibrous & muscular bands
containing the blood vessels & for it
has vessels*

Neoplasms of Uterus

Myoma or Fibroids

In 20% of all women you find fibroids - Contain much fibrous tissue but are 'muscle-tumours'. In reality a fibro-myoma - On section looks like a cotton ball cut in two - Firm + hard - Less vascular than the wall of the uterus - May find as many as 50 distinct fibroid tumours in one uterus - Vary in size + weight - Pea or bean up to any size - Grow large if solitary - May grow above umbilicus.

Relations to walls of Uterus

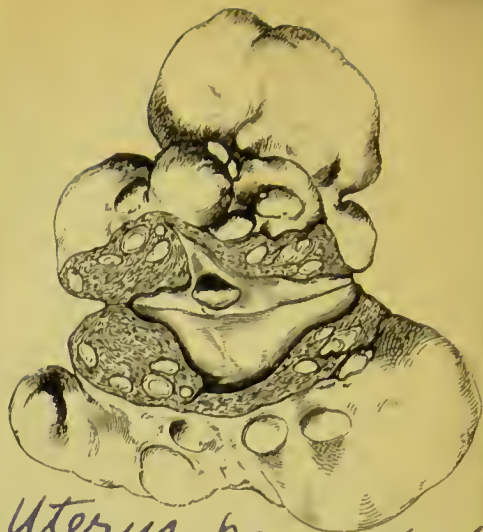
May be sub-peritoneal, interstitial + sub-mucous -

The tumour has a loose capsule of cellular tissue - Thus they may change their position -

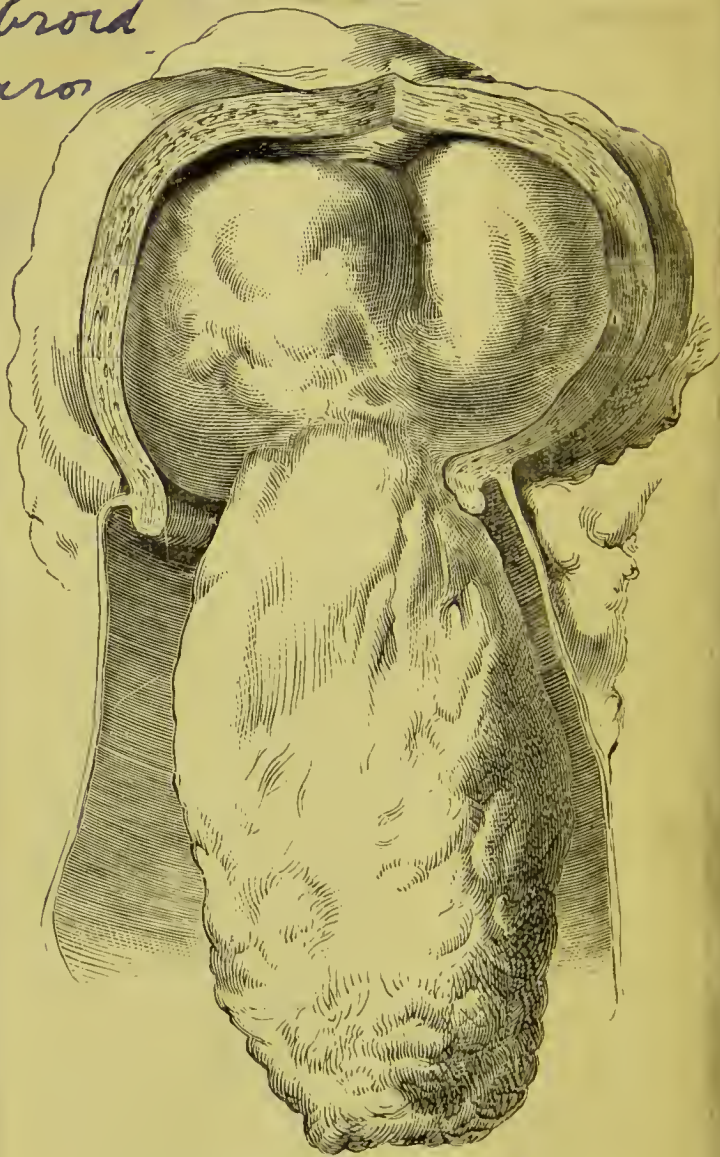
The pedicle of the sub-peritoneal may give way + leave the tumour a free moving body



Large solid Fibroid
Uterus growing around
it



Uterus pervaded
with nodules of
Fibroids-



Submucous or
interuterine

in the peritoneal cavity -

This may happen in a submucous
+ it may be expelled p.v.

In submucous we may have
spontaneous enucleation - This
happens in sessile forms. The
m.m. breaking over it.

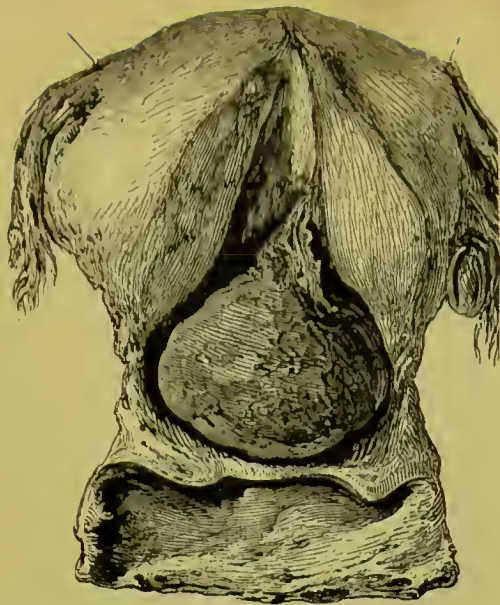
The tumour may 'melt away'
in puerperium -

often after menopause the
tumour undergoes calcareous
degeneration or ossification -
This womb-stone may become
expelled -

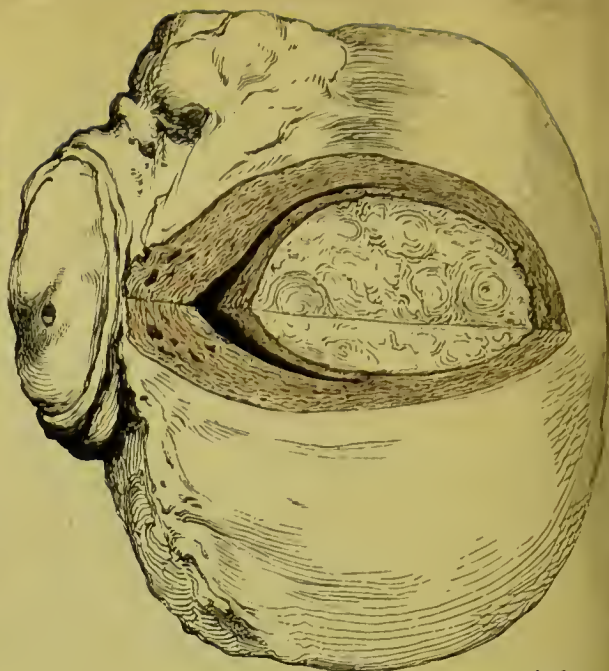
When a fibroid is removed a
sarcoma may spring from the
site -

Symptoms variable.

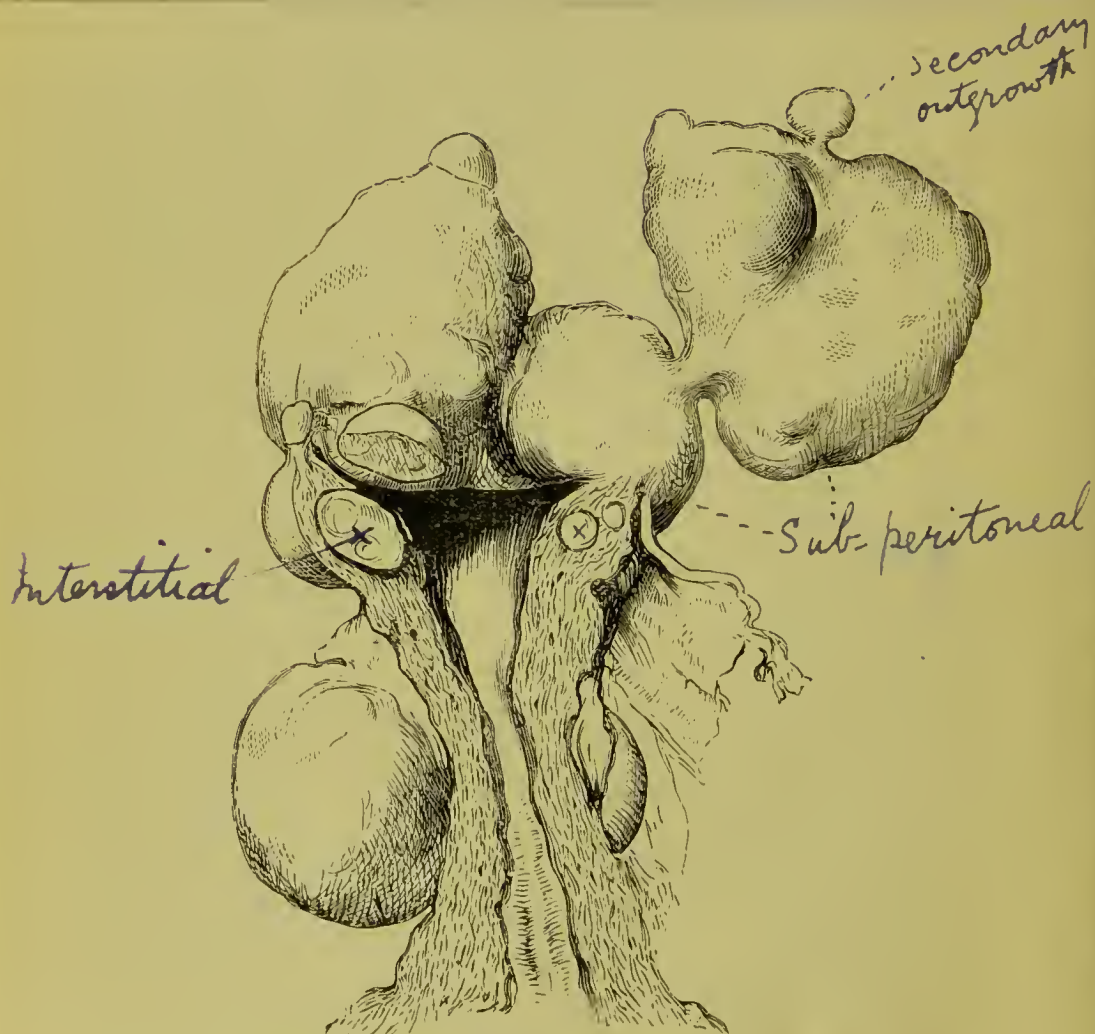
1. Abdominal enlargement. Slow
growth + may be large before
it attracts attention
2. May interfere with menstruation
especially in subperitoneal variety.
producing amenorrhoea -
Far more common is
Menorrhagia - + so



*Sub Mucous or
interuterine*



Fibroid in utero



Interstitial

Sub-peritoneal

*secondary
outgrowth*

*Uterus & many
Fibroid tumours.*

a certain degree of endometritis
Ulcerative process may set in
+ give rise to profuse metroragic
haemorrhages.

Dysmenorrhoea caused by the tumour
acting as foreign body, either by
its pressure or by blocking up
the OS.

Leucorrhoea between menstrual
period is especially seen in
submucous variety.

Dyspareunia may be present -
or sperm: + ovum may never
meet -

or if they do the ovum may
be "badly" engrafted -
or early ~~ab~~ abortion may
take place

If labour take place

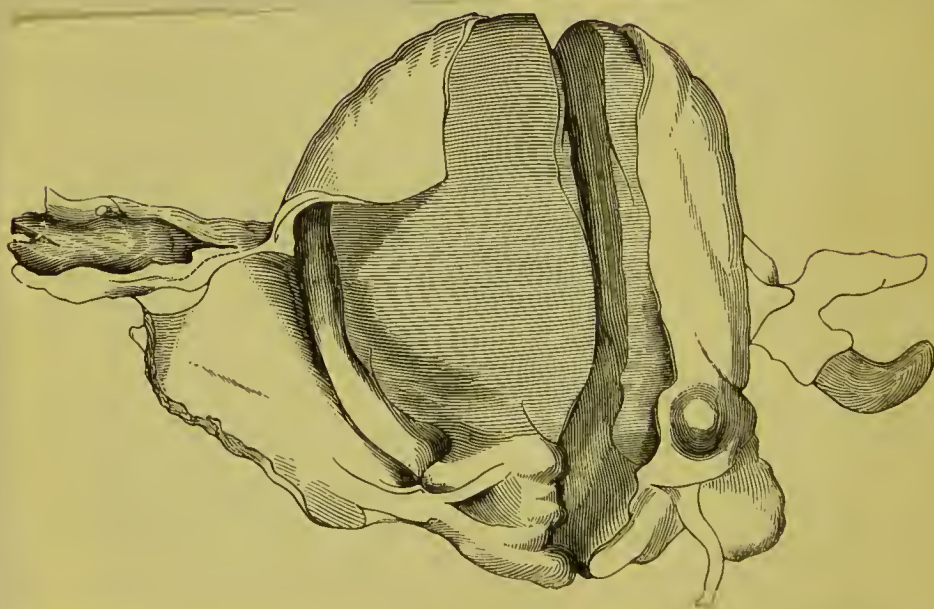
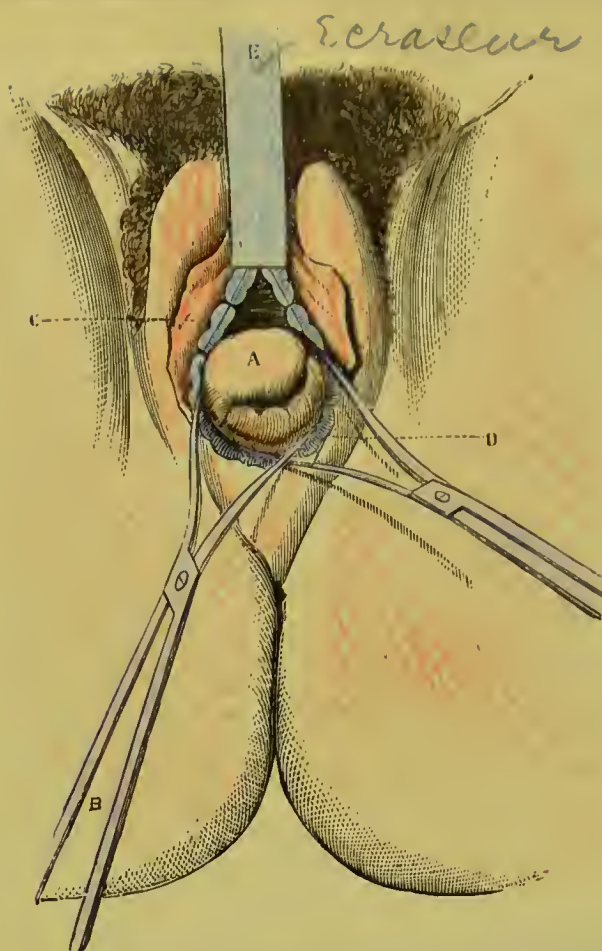
1st Stage impedes uterine activity

2nd Stage impedes progress

3rd Stage

Rectum + Bladder may
be pressed on + constipation
retention -

Pains in loins + mammal -



+ pressure causing + varicosity +
oedema in lower extremities -

Diagnosis made by p v -
also bimanual +
use of sound -

Where it has become abdominal
the tumour is firm + hard -
The consistence is invariable.
May or may not hear vascular
bruit - according to its relation
with the uterine wall -

P.V + sound show that tumour
moves with uterus etc etc -

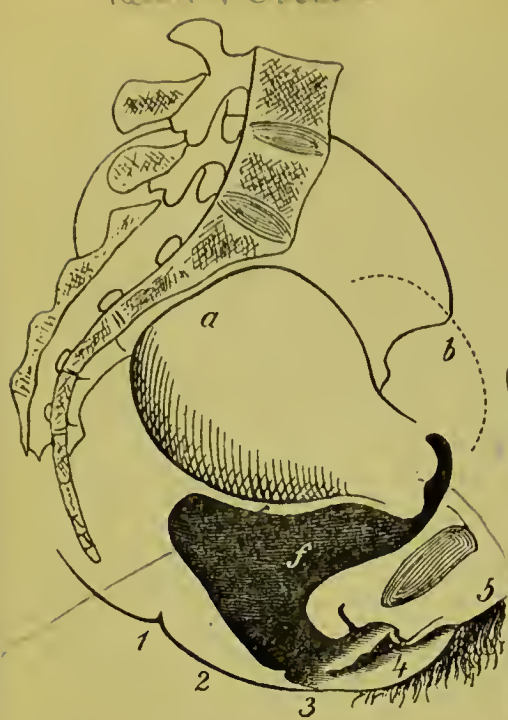
For full diagnosis dilate os
+ tent - If in doubt
leave a month + if preg:
will have grown much more
than if fibroid -

Only dangerous to life where
there is haemorrhage or where
they are so big that they
interfere + abdominal functions.
It is often worth while to
wait for menopause to
see if they will atrophy -

in gravid uterus

Retraction

in flexion



swelling of post vag wall

difficult to pr the os -



But may grow worst after menopause & become fibro-cystic.

Treatment

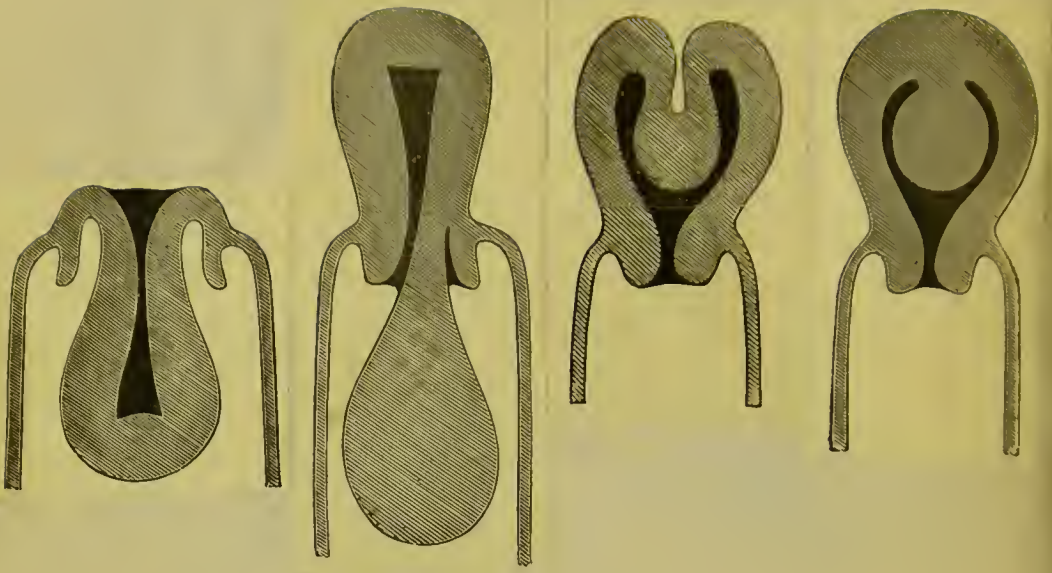
(1) Medical Improve patients general health - Mineral waters of some springs have reputation (Carlsbad, ~~Erotrach~~, Creuznach, etc) for removing & curing such conditions.

Iodides & Br of K gr 5-10

T. it often will do much to prevent further growth -

Ergot is especially good in interstitial or submucous varieties - arrests the haemorrhages, promoting expulsion or at any rate keeping down the size - Give a few days before the menstrual period is due & keep it up over the menstrual period & then give it again over the next period -

Lumine or Strychnine may also be given -
Electricity is some^s satisfactory.



+ in cavity of ~~up~~ uterus - by
sound - 3 - pole outside on pad -
This is good as palliative in
haemorrhagic fibroids - In
about 10% tumour reduced in size.
In about 50% pain relieved -
or a more dangerous procedure
is to introduce - pole into the
tumour substance + + pole
outside abdomen + so melt
it down - But this is apt
to lead to gangrene + sepsis -

Surgical not necessary in most
cases - tide over symptoms till
menopause -

2000 case when surgical interference -
1. Where haemorrhage is so
severe as to endanger patients
life or by pressure symptoms.
2. Where tumour is growing very
rapidly -

Treat 1. twist off if narrow
pedicle
2. If pedicle is too

thick cut it thro' with
polyptome (?) or ecraseur -

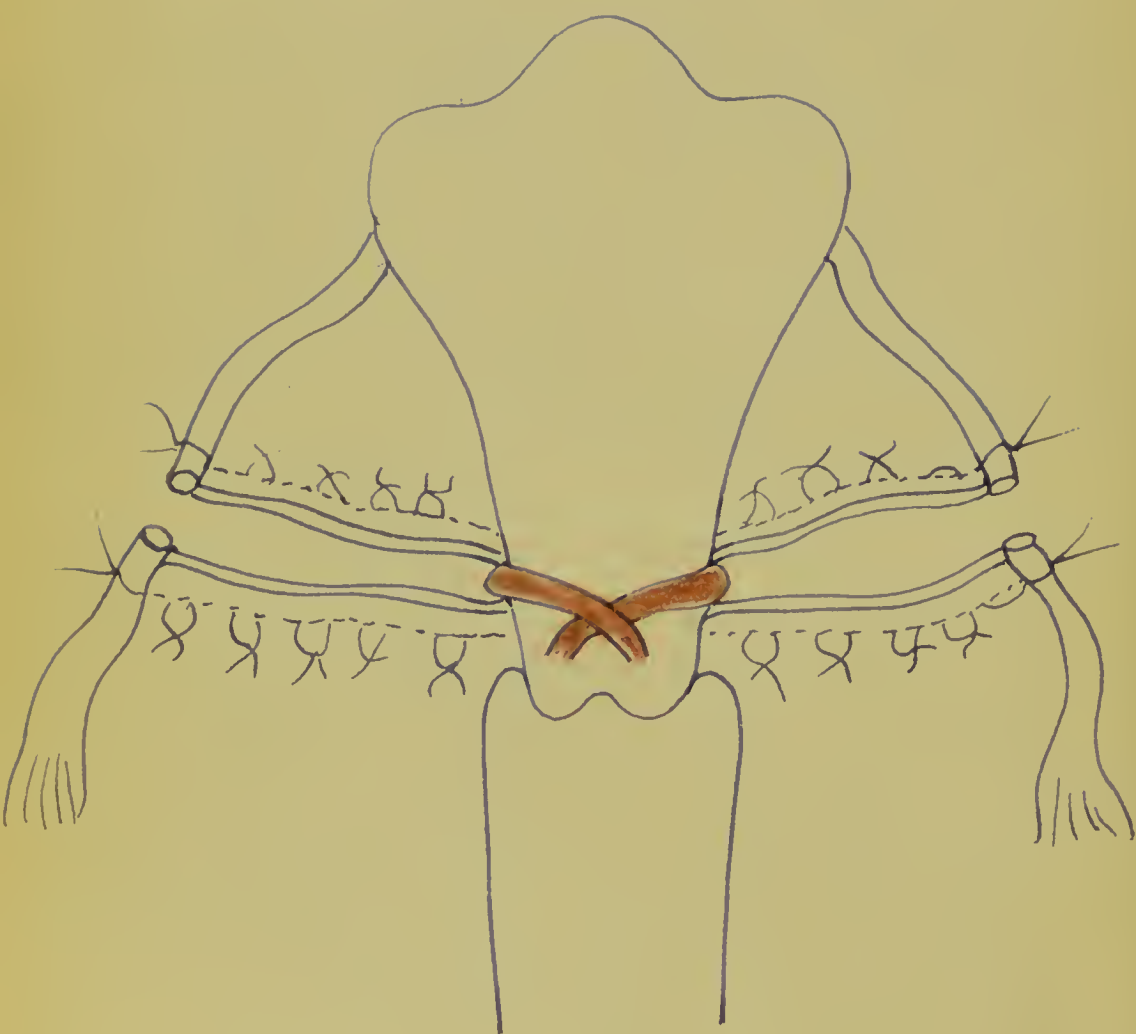
3. where submucous -
curettung whole mucosa of
uterus + application of some
caustic may stop the haemorrhage
for some months but this
is only temporary -

4. If of 2 or 3 in size + giving
rise to much haemorrhage
may dilate cervix +
force out tumour with
finger or nail curette -
If large + submucous -
use Morcellement's operation -
Dilate cervix as far as
poss. - incise m m over
tumour + seize tumour
with strong toothed forceps
+ then cut away the
tumour piece meal -

~~This~~ This is a very long operation
+ somewhat dangerous

Intermural tumours -

May treat ~~it~~ as No 5 -
or may remove ~~it~~ uterus



and tumour all in a piece -

7. Abdominal Operations -

(a) first of all remove ovaries -
haemorrhage ceases & tumour
shrinks - but cannot be
removed in all cases
because may be stretched
out of or unbedded in
the tumour -

(b) Myomectomy - but is dangerous
& haemorrhage likely to follow.

Vaginal Hysterectomy -
Broad ligatures are first
ligatured right down (little
by little) to the cervix -

Then strong elastic band
passed round cervix & uterus -
or may apply a clamp -
If clamp be used just allow to
slough off - Elastic ligature
is better -

SARCOMA UTERI.

STRUCTURE. Diffuse form. Circumscribed Fibrous.

SEATS. Body of Uterus

ETIOLOGY. Climateric chiefly - (not foetus as in cancer)

SYMPTOMS AND DIAGNOSIS. Haemorrhage. Pain. Leucorrhoea.

PROGNOSIS. Diffuse form rapid. (Dull) (Heavy) - Cachexia

TREATMENT. Vaginal Hysterectomy - fatal.

In hopeless cases curette & caustic

Pach ofium - Astringent douches.

Sarcoma Uteri

Most common in the Body -
(cf cancer common in cervix)
Two forms

1. Diffuse Sarcoma of m m
2. Circumscribed fibrous Sarcoma

No 1 grows from conn: tiss: of m m -
generally small round celled -
two forms

- A General thickening of whole m m
- B. Polypoidal masses making
m m roughened - Surface
then become necrotic & breaks
down very easily when
touched with finger or sound.
hence the haemorrhage -

- 0 2 grows from conn tiss: of uterine
paranchyma - more or less
solid & very like fibroid -
may be (a) subserous
(b) interstitial
(c) sub~~per~~ mucous

but differs from fibroid in not
having a capsule -
this also consists of sm: round cells

inversion of Uterus (chronic) often results from this form of sarcoma -

May occur at any age but chiefly climacteric period -

Symptoms

1. Haemorrhage - may be very severe in diffuse form especially after it has broken down - in circumscribed form shows itself as a watery blood stained discharge.
2. Pain not so common or so severe as in cancer + may be absolutely absent. Generally a dull heavy bearing down sort of pain.
3. Leucorrhoea generally bl. stained + copious - like rice water with little shreds of tissue. May remain sweet for some months (but fetid early in cancer)
4. Cachexia usually well marked. Rapid loss of flesh + strength.

Differential

Diagnosis

1. Uterine Enlargement - Use sound but with caution as it produces haemorrhage. Seldom forms abdominal tumour.
2. Polypoidal masses may project from cervix.
3. Dilate cervix & introduce finger when soft friable m m c sarcomatous tissue is felt & piece can be scraped off & examined microscopically -

Differential of Diffuse from Chronic Haemorrhagic Endometritis may be very difficult indeed. Watch case for say a month.

Q: Diagnose & circumscribed from ordinary fibroid tumour - cleared up by microscope - can't do this wait a month.

Q: Dia: between cancer & sarcoma not important as treatment is the same -



Prognosis Tendency in circumscribed to remain same size for years - Diffuse is much more rapid + will be fatal in short time if whole uterus be not removed.

Treatment Vaginal Hysterectomy - Patient in lithotomy position - This is important read it in Text book -

If broad ligaments are also affected you cannot cure surgically - ∴ alleviate - Curette + apply caustic - In latter stages of the disease give opium freely - astringent douches to diminish the discharge.

CARCINOMA UTERI.

PATHOLOGY—*ulcerative cauliflower nodular*

Various types; *Epitheliomatous - Scirrhus - Medullary -*

Anatomical Seats; *Cervix chiefly*

Structure;

Implication of neighbouring organs. *Vagina - Body of Uterus - Bladder*

ETIOLOGY. *Above 40 years -*

SYMPTOMS--A. Local: Pain, Hæmorrhage, Fœtid discharge.

B. Constitutional; Cachexia.

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS.

TREATMENT:—

1. Of Local Symptoms. *ergot for hæc. or douche - Spum. sap. - Antiseptic for discharge*
2. Of Constitutional Condition. *or caustic*
3. Operative Measures: Scraping away morbid tissue; Amputation of Cervix; Extirpation of Uterus.

etc. forming fistulae Urethra



Commonest in Cervix

Carcinoma Uteri

Very common disease indeed
6% of women dying between ages
45 & 50 die of cancer of uterus.

Types 1. Epitheliomatous may
a. Slowly break down & ulcerate
b. Forming large cauliflower growth
growing downwards into vagina
which it involves -

2. ~~Schramm's~~ Scirrhus
Fibrous elements in excess

3. Medullary - cell element
in excess -

Cancer of cervix may spread

1. Into Vagina

1. Into Uterus

Deep into tissue - involving
bladder - fistulae often formed -
Ureters may become involved (Uraemia)

common cause of death in

cancer - ~~the~~ May involve

Rectum & form fistulae -

May involve peritoneum but this
is only a thickening -

causes of death in order



rectum

vagina

bladder

of frequency
Exhaustion
uraemia
Peritonitis
Septicaemia
Haemorrhage





